

Attachment 2

2006 ENERGYSOLUTIONS SITE-SPECIFIC COST ESTIMATE

**KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.**

**DECOMMISSIONING COST ESTIMATE STUDY
OF THE
KEWAUNEE NUCLEAR POWER PLANT**

Prepared for:
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, VA 23060

Prepared by:
EnergySolutions, LLC
143 West Street
New Milford, CT 06776

June 2006

Project Application

Prepared By

Date

2512

Barry Sims

6/16/06

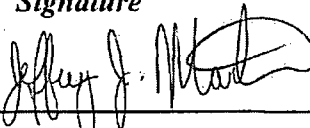
APPROVALS:

Title

Signature

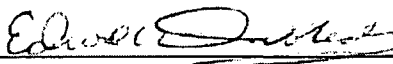
Date

Technical Review


Jeffrey Martin

6/21/06

Director, Field Services


Edward C. Doubleday

6/16/06

REVISION LOG

Revision Number	Affected Pages	CRA Number	Approval
-----------------	----------------	------------	----------

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 EXECUTIVE SUMMARY	5
2.0 INTRODUCTION	10
2.1 STUDY OBJECTIVE	10
2.2 REGULATORY FRAMEWORK	11
3.0 STUDY METHODOLOGY	13
3.1 GENERAL DESCRIPTION	13
3.2 SCHEDULE ANALYSIS	13
3.3 DECOMMISSIONING STAFF	15
3.4 WASTE DISPOSAL	16
3.5 FINAL STATUS SURVEY	20
3.6 OCCUPATIONAL EXPOSURE	20
3.7 CONTINGENCY	20
3.8 COST REPORTING	22
4.0 SITE SPECIFIC TECHNICAL APPROACH	23
4.1 FACILITY DESCRIPTION	23
4.2 DECOMMISSIONING PROCESS	23
4.3 DECOMMISSIONING STAFF	26
4.4 SPENT FUEL MANAGEMENT STAFF	26
4.5 SPENT FUEL SHIPMENTS	27
5.0 BASES AND ASSUMPTIONS	28
6.0 STUDY RESULTS BY SCENARIO	33
6.1 SCENARIO 1 – BASE CASE	33
6.2 SCENARIO 2 – BASE CASE, EXCEPT REPOSITORY OPENS IN 2017	41
6.3 SCENARIO 3 – BASE CASE, EXCEPT LICENSE EXTENSION	44
6.4 SCENARIO 4 – BASE CASE, EXCEPT LICENSE EXTENSION AND REPOSITORY OPENS IN 2017	47
6.5 SCENARIO 5 – BASE CASE, EXCEPT DECOMMISSIONING PERFORMED BY THIRD PARTY	50
6.6 SCENARIO 6 – BASE CASE, EXCEPT LICENSE EXTENSION AND DECOMMISSIONING PERFORMED BY THIRD PARTY	54
7.0 REFERENCES	56

FIGURES

FIGURE 1-1	SCENARIO 1 SUMMARY SCHEDULE.....	8
FIGURE 6-1	SCENARIO 1 SUMMARY SCHEDULE.....	35
FIGURE 6-2	SCENARIO 2 SUMMARY SCHEDULE.....	42
FIGURE 6-3	SCENARIO 3 SUMMARY SCHEDULE.....	45
FIGURE 6-4	SCENARIO 4 SUMMARY SCHEDULE.....	48

TABLES

TABLE 1-1	COST SUMMARY BY ACCOUNT	9
TABLE 6-1	SCENARIO 1 COST AND SCHEDULE SUMMARY.....	36
TABLE 6-2	SCENARIO 1 STAFF LEVELS	37
TABLE 6-3	SCENARIO 1 MANHOUR REQUIREMENTS.....	38
TABLE 6-4	SCENARIO 1 ESTIMATED OCCUPATIONAL EXPOSURE.....	39
TABLE 6-5	SCENARIO 1 WASTE DISPOSAL VOLUMES	40
TABLE 6-6	SCENARIO 2 COST AND SCHEDULE SUMMARY.....	43
TABLE 6-7	SCENARIO 3 COST AND SCHEDULE SUMMARY.....	46
TABLE 6-8	SCENARIO 4 COST AND SCHEDULE SUMMARY.....	49
TABLE 6-9	SCENARIO 5 COST AND SCHEDULE SUMMARY.....	51
TABLE 6-10	SCENARIO 5 UTILITY STAFF LEVELS	52
TABLE 6-11	SCENARIO 5 THIRD PARTY STAFF LEVELS	53
TABLE 6-12	SCENARIO 6 COST AND SCHEDULE SUMMARY.....	55

APPENDICES

APPENDIX A	LIST OF SYSTEMS AND STRUCTURES
APPENDIX B	SPENT FUEL SHIPPING SCHEDULES
APPENDIX C	DETAILED PROJECT SCHEDULES
APPENDIX D	DETAILED COST TABLES
APPENDIX E	ANNUAL CASH FLOW TABLES
APPENDIX F	DETAILED ANNUAL CASH FLOW TABLES

1.0 EXECUTIVE SUMMARY

This report presents the results of a site-specific Decommissioning Cost Estimate Study for the Dominion Virginia Power (Dominion) Kewaunee Power Station (Kewaunee). The study has been performed to furnish an estimate for financial planning purposes of the costs for (1) decommissioning Kewaunee to the extent required to terminate the plant's operating license, 10 CFR 50.75(c), (2) post-shutdown management of spent fuel until acceptance by the U.S. Department of Energy (DOE), 10 CFR 50.54(bb), and (3) clean demolition of structures and restoration of the site to Greenfield conditions.

The study methodology follows the basic approach originally presented in the Atomic Industrial Forum/National Environmental Studies Project Report AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," (Ref. No. 3). The report was prepared in accordance with Nuclear Regulatory Commission (NRC) Regulatory Guide 1.202, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors," (Ref. No. 6). The estimate is based on compliance with current regulatory requirements and proven decommissioning technologies.

The Code of Federal Regulations differentiates between the post-shutdown costs associated with storage of spent fuel on-site and the decommissioning of the facility. 10 CFR 50.75(c) requires funding by the licensee of the facility for the decommissioning program but specifically excludes the cost of removal and disposal of spent fuel and the removal of clean structures. 10 CFR 50.54 (bb) requires funding by the licensee "for the management of all irradiated fuel at the reactor upon expiration of the reactor operating license until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository." 10 CFR 50.75(c) excludes the cost of site restoration activities that do not involve the removal of residual radioactivity necessary to terminate the NRC license. These activities can either restore the site to "Brownfield" or "Greenfield" conditions depending on the desired end-state.

EnergySolutions has established a Work Breakdown Structure (WBS) and cost accounting system to differentiate between these three project elements. The cost and schedule for all activities are presented in this report as either License Termination or 10 CFR 50.75(c), spent fuel management or 10 CFR 50.54(bb), and "Greenfield" or clean removal and site restoration.

The study analyzes the following six scenarios as defined by Dominion.

Scenario 1 Base Case

- DECON methodology.
- No license extension with shutdown on December 21, 2013.
- Terminate spent fuel pool operation seven years after permanent unit shutdown.
- Spent fuel will be stored in Multi-Purpose Canisters (MPCs) at an onsite Independent Spent Fuel Storage Installation (ISFSI) to be built in the future.
- A dry transfer facility will not be necessary.
- Yucca Mountain spent fuel repository opens in 2012.

Scenario 2 Base case except Yucca Mountain spent fuel repository opens in 2017.

Scenario 3 Base case except 20-year license extension.

Scenario 4 Base case except 20-year license extension and Yucca Mountain spent fuel repository opens in 2017.

Scenario 5 Base case except a third party performs the decommissioning and Dominion has no active role other than oversight.

Scenario 6 Base case except 20-year license extension and a third party performs the decommissioning and Dominion has no active role other than oversight.

Each scenario incorporates the spent fuel schedules developed by Dominion. All scenarios except Scenarios 5 and 6 are based on Dominion acting as the Decommissioning General Contractor (DGC). Scenarios 5 and 6 are based on an independent decommissioning management organization and a separate DGC. Dominion, or the licensee, involvement will be limited to providing contract administration and regulatory oversight of the third party decommissioning, spent fuel management, and site restoration activities.

The estimate is based on site-specific plant systems and buildings inventories developed from material take-offs performed by EnergySolutions. The required manhours, activity schedule hours, activity costs, waste volume, waste weight and waste classification were determined for the decommissioning activities based on these inventories and EnergySolutions' proprietary Unit Cost Factors (UCFs). A Critical Path Method (CPM) analysis was performed, based on a decommissioning activities analyses and the aforementioned activity schedule hours, to determine the decommissioning schedules. These schedules reflect the effects of sequenced activity-dependent or distributed decommissioning elements such as planning and preparations, major component removal, building decontamination, and spent fuel shipping.

The schedules are broken into project phases or periods by cost account, License Termination – 50.75(c), Spent Fuel – 50.54(bb) and Greenfield (g). The periods serve as the basis for establishing the Utility, DGC and Third Party staffing requirements. Additionally, the period durations are used to calculate period-dependant undistributed costs such as gross receipt taxes, insurance, energy, license fees and permits, supplies and services and security. The distributed and undistributed costs were added together and a contingency was applied to arrive at the total decommissioning cost estimate. All costs, used in these calculations, were current in September 2005.

The summary schedule for Scenario 1 is shown in Figure 1-1. The summary schedule for Scenario 2 only differs in the duration of spent fuel storage. The summary schedules for Scenarios 3, 4 and 6 differ in the shutdown date (December 21, 2033) and the duration of dry storage. The summary schedule for Scenario 5 is identical to Scenario 1. The study results for all six scenarios summarized by account are given in Table 1-1.

Figure 1-1
Scenario 1 Summary Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2012

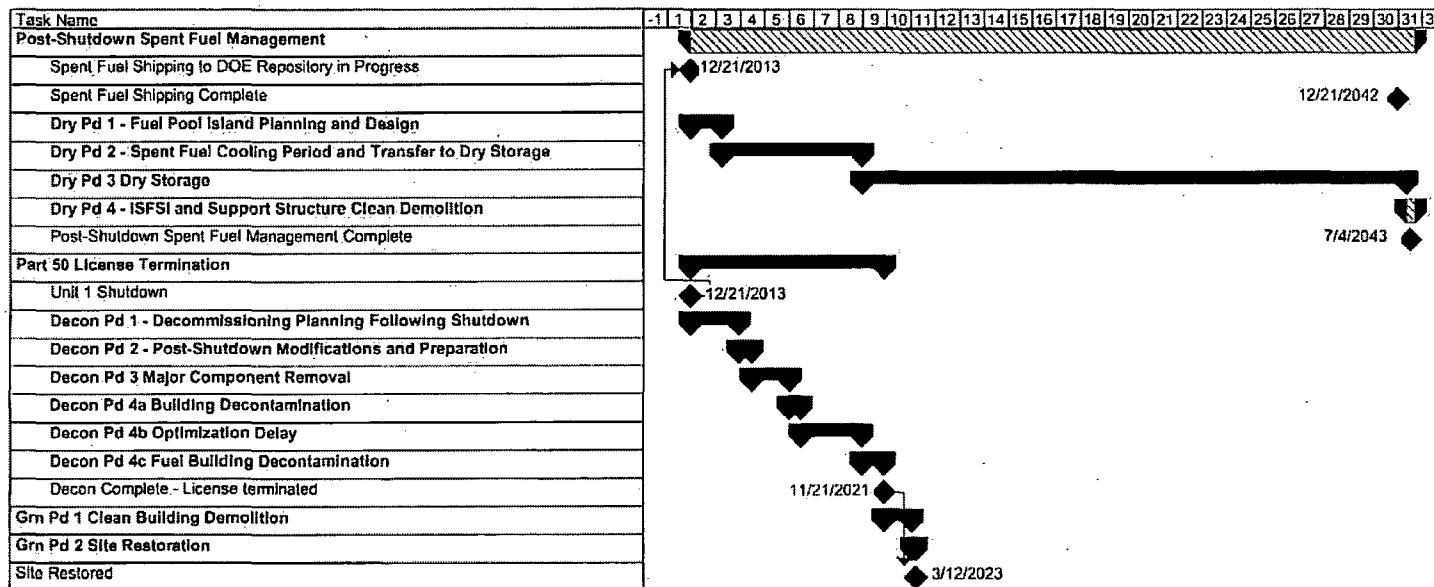


TABLE 1-1
COST SUMMARY BY ACCOUNT
(Dollars in Thousands)

Scenario	License Termination – 50.75(c)	Spent Fuel Management – 50.54 (bb)	Greenfield (g)	Total
1	\$334,313	\$231,686	\$19,170	\$585,169
2	\$334,313	\$273,386	\$19,170	\$626,869
3	\$334,313	\$201,783	\$19,170	\$555,266
4	\$334,313	\$231,664	\$19,170	\$585,147
5	\$377,897	\$272,632	\$21,911	\$672,440
6	\$377,897	\$237,618	\$21,911	\$637,426

2.0 INTRODUCTION

2.1 STUDY OBJECTIVE

This report presents the results of a site-specific Decommissioning Cost Estimate Study for the Dominion Virginia Power (Dominion) Kewaunee Power Station (Kewaunee). The study was performed to furnish an estimate for financial planning purposes of the costs for (1) decommissioning Kewaunee to the extent required to terminate the plant's operating license, 10 CFR 50.75(c), (2) post-shutdown management of spent fuel until acceptance by the U.S. Department of Energy (DOE), 10 CFR 50.54(bb), and (3) clean demolition of structures and restoration of the site to Greenfield conditions.

The study methodology follows the basic approach originally presented in the Atomic Industrial Forum/National Environmental Studies Project Report AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates." The report was prepared in accordance with Nuclear Regulatory Commission (NRC) Regulatory Guide 1.202, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors." The estimate is based on compliance with current regulatory requirements and proven decommissioning technologies.

The study analyzes the following six scenarios defined by Dominion.

Scenario 1 Base Case

- DECON methodology.
- No license extension with shutdown on December 21, 2013.
- Terminate spent fuel pool operation seven years after permanent unit shutdown.
- Spent fuel will be stored in MPCs at an onsite Independent Spent Fuel Storage Installation (ISFSI) to be built in the future.
- A dry transfer facility will not be necessary.
- Yucca Mountain spent fuel repository opens in 2012.

Scenario 2 Base case except Yucca Mountain spent fuel repository opens in 2017.

Scenario 3 Base case except 20-year license extension.

Scenario 4 Base case except 20-year license extension and Yucca Mountain spent fuel repository opens in 2017.

Scenario 5 Base case except a third party performs the decommissioning and Dominion has no active role other than oversight.

Scenario 6 Base case except 20-year license extension and a third party performs the decommissioning and Dominion has no active role other than oversight.

2.2 REGULATORY FRAMEWORK

Provisions of current laws and regulations affecting decommissioning, waste management and spent fuel management are as follows:

1. Current NRC policy requires either: (a) removal of all spent fuel from a facility licensed under Title 10 CFR 50, or (b) on-site storage of spent fuel under a site-specific Independent Spent Fuel Storage Installation (ISFSI), Part 72 license before the license can be terminated.
2. Title 10 CFR 50.75(c) requires funding by the licensee of the facility for the decommissioning program but specifically excludes the cost of removal and disposal of spent fuel and the removal of clean structures.
3. Title 10 CFR 50.54 (bb) requires the licensee, within two years following permanent cessation of operation of the reactor or five years before expiration of the operating license, whichever occurs first, to submit written notification to the NRC for its review and preliminary approval of the program by which the licensee intends to manage and provide funding "for the management of all irradiated fuel at the reactor upon expiration of the reactor operating license until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository." However, the NRC does not currently consider post-shutdown spent fuel management costs to be decommissioning costs.
4. Title 10 CFR Part 961, Appendix E requires spent fuel to be cooled in the spent fuel pool for at least five-years before it can be accepted by DOE.
5. A bill to enact the "Atlantic Interstate Low-Level Radioactive Waste Compact Implementation Act" was signed by the Governor of South Carolina on June 6, 2000. The Atlantic Compact consists of South Carolina, Connecticut and New Jersey. Under the act the compact will systematically reduce disposal capacity available to out of region waste generators. The disposal facility located in Barnwell, South Carolina is one of two facilities in the United States currently licensed to dispose of Class B and C low-level radioactive waste.

Decommissioning Alternatives

The three basic methods for decommissioning are DECON, SAFSTOR, and ENTOMB which are summarized as follows:

1. DECON: The equipment, structures, and portions of the facility and site that contain radioactive contaminants are promptly removed or decontaminated to a level that permits termination of the license after cessation of operations.

2. SAFSTOR: The facility is placed in a safe, stable condition and maintained in that state (safe storage). The facility is decontaminated and dismantled at the end of the storage period to levels that permit license termination. NRC regulations require decommissioning to be completed within 60 years of cessation of operation.
3. ENTOMB: Radioactive structures, systems, and components are encased in a structurally long-lived substance, such as concrete. The entombed structure is appropriately maintained and monitored until radioactivity decays to a level that permits termination of the license. Since entombment will exceed the requirement for decommissioning to be completed within 60 years of cessation of operation NRC handles entombment requests on a case-by-case basis.

The selection of a preferred decommissioning alternative is influenced by a number of factors pertinent at the time of final plant shutdown. The factors include the cost of each decommissioning alternative, minimization of occupational radiation exposure, availability of a low-level waste disposal facility, availability of a high-level waste (spent fuel) repository, regulatory requirements, and public concerns.

Post-Shutdown Spent Fuel Management Alternatives

The published date for start-up of the Department of Energy's (DOE's) Yucca Mountain repository is 2010. However, there is considerable uncertainty associated with this scheduled opening. Therefore utilities must address long-term post-shutdown spent fuel storage as an integral element of their decommissioning planning. The basic options for long-term post-shutdown spent fuel management are (1) wet storage consisting of continued maintenance and operation of the spent fuel pool, (2) dry storage consisting of transfer of spent fuel from the fuel pool to on-site dry storage modules following the minimum cooling period, and (3) off-site storage at a licensed private or commercial storage facility.

The selection of a spent fuel management alternative has a significant impact on decommissioning. Maintaining the spent fuel pool for an extended duration following cessation of operations prevents termination of the Part 50 license and typically has a higher annual maintenance and operating cost than the dry storage alternative. Transfer of spent fuel to an Independent Spent Fuel Storage Installation (ISFSI) allows an earlier termination of the Part 50 license, but requires (1) the ISFSI be licensed under 10 CFR Part 72, (2) capital expenditures for purchase and construction of the ISFSI, and (3) dismantlement and disposal of the ISFSI following completion of spent fuel transfer to DOE.

3.0 STUDY METHODOLOGY

3.1 GENERAL DESCRIPTION

EnergySolutions maintains a proprietary decommissioning cost model based upon the fundamental technical approach established in AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," dated May 1986. The cost model has been continuously updated in accordance with regulatory requirements and industry experience. The cost model includes elements for estimating distributed and undistributed costs. Distributed costs are activity specific and include planning and preparation costs as well as the decontamination, packaging, disposal and removal of major components and systems. For example, segmentation, packaging and disposal of the reactor internals is a distributed cost. Undistributed costs, sometimes referred to as collateral costs, are typically time dependent costs such as utility and decommissioning general contractor staff, gross receipt taxes, insurance, regulatory fees and permits, energy cost and security staff.

The methodology for preparing cost estimates for a selected decommissioning alternative requires development of a site-specific detailed work activity sequence based upon the plant inventory. The activity sequence is used to define the labor, material, equipment, energy resources, and duration required for each activity. In the case of major components individual work sequence activity analyses are performed based on the physical and radiological characteristics of the component and the packaging, transportation and disposal options available.

In the case of small components and equipment such as piping, pumps, tanks and structures the work durations and costs are calculated based on Unit Cost Factors (UCFs). UCFs are economic parameters developed to express costs per unit of work output, piece of equipment, or time. They are developed using decommissioning experience, information on the latest technology applicable to decommissioning and engineering judgment. The total cost of a specific decommissioning activity can be determined by multiplying the total number of units associated with that activity by the UCF, expressed as \$/unit, for that activity. For example, the estimated demolition cost of a non-contaminated concrete structure can be obtained by multiplying the volume of concrete in the structure by the UCF for non-contaminated reinforced concrete demolition, expressed in \$/unit volume. Each UCF has associated with it a man-hours/unit and schedule-hours/unit. From these values, total man-hours and total schedule-hours can be determined for a particular activity.

3.2 SCHEDULE ANALYSIS

Once the work activity durations are calculated for all distributed activities a critical path schedule analysis is performed using either MS Project or Primavera Project Planner. The schedule accounts for constraints such as spent fuel cooling periods and regulatory reviews. The schedule is typically delineated into phases or time-periods (hereinafter referred to as period or periods) that differentiate manpower requirements and undistributed costs.

In order to differentiate between License Termination, Spent Fuel and Greenfield elements of the entire decommissioning scope-of-work EnergySolutions has established a Work Breakdown Structure (WBS) and cost accounting system to treat each element as a sub-project. Accordingly, the overall project schedule is divided into a total of twelve periods with major milestones defining the beginning and ending of each period. The major milestones also serve as the basis for integrating the periods of the three subprojects. The License Termination and Greenfield project periods are scheduled sequentially while the Spent Fuel time-periods occur in parallel. The project periods defined for this site-specific study and the major activities performed during each period are as follows:

License Termination

Decon Pd 1 - Decommissioning Planning Following Shutdown

- Preparation of Decommissioning Licensing Documents
- Decommissioning Planning and Design
- Prepare Integrated Work Sequence and Schedule
- Preparation of License Termination Plan

Decon Pd 2 – Post Shutdown Modifications and Preparation

- Flush and Drain Non-Essential Systems
- Modify Containment Access and Implement Cold and Dark
- Design, Specify, and Procure Special Items and Materials

Decon Pd 3 – Major Component Removal

- Reactor Pressure Vessel and Internals Removal and Disposal
- Non-Essential Systems Removal

Decon Pd 4a – Building Decontamination

- Decon Structures Except Fuel Building
- Remediate Soil Contamination

Decon Pd 4b – Optimization Delay

- Delay Period for Removal of Fuel from Fuel Pool

Decon Pd 4c Fuel Building Decontamination

- Removal and Disposal of Spent Fuel Racks
- Decon Fuel Building
- Perform Final Status Survey
- Part 50 License Termination

Spent Fuel Management

Dry Pd 1 – Fuel Pool Island Planning and Design

- Design Spent Fuel Support System Modifications
- Design Control Room Relocation
- Design Spent Fuel Storage Security Modifications

Dry Pd 2 – Spent Fuel Cooling and Transfer to Dry Storage

- Operation and Maintenance of Fuel Pool
- Transfer fuel assemblies to Dry Storage
- Maintenance and Inspection of ISFSI

Dry Pd 3 – Dry Storage

- Maintenance and Inspection of ISFSI
- Continued spent fuel shipments to DOE
- Preparation and submittal of Part 72 License Termination Plan
- Perform Verification Survey
- Part 72 License Terminated

Dry Pd 4 – ISFSI and Support Structure Clean Demolition

- Demolition of Horizontal Storage Modules and ISFSI Pad
- Demolition of ISFSI support structures
- Final Site Restoration

Greenfield

Grn Pd 1 – Clean Building Demolition

- Demolition of all structures except those required to support ISFSI operations

Grn Pd 2 – Site Restoration

- Finish Grading and Seeding

3.3 DECOMMISSIONING STAFF

EnergySolutions' philosophy towards decommissioning is to assume the project will be performed in an efficiently planned and executed manner using project personnel experienced in decommissioning. EnergySolutions typically assumes that the decommissioning will be performed by a highly experienced and qualified Decommissioning General Contractor (DGC) with oversight and management of the decommissioning operations performed by the Utility staff. It is also assumed that Utility staff is supplemented by professional consulting engineering, particularly in the planning and preparation phase. EnergySolutions has developed optimal Utility and DGC staffing levels for each project period based on the AIF guidelines and industry experience. The size of the Utility and DGC staff is varied in each period in accordance with the requirements of the work activities. Utility staffing is organized into the following departments or functional areas:

- Administration
- Engineering
- Health Physics
- Management
- Plant Maintenance
- Plant Operations
- Quality Assurance
- Security Administration
- Security Guard Force
- Waste Operations
- Fuel Pool Maintenance and Operation Staff
- Additional Staff for Spent Fuel Shipping

EnergySolutions analyzes the utility's operational staff and develops site-specific staffing plans for each study. The Utility's existing salary structure and severance policy is then used as the basis for calculating utility staff labor costs. EnergySolutions uses industry data to develop DGC salary costs. For Scenarios 1, 2, 3 and 4 of the Kewaunee site-specific study EnergySolutions developed a staffing plan based on Dominion staff serving as both the utility and DGC. Scenario 5 is based on decommissioning being performed by a third party staff supported by a DGC as discussed in Section 4.3.

3.4 WASTE DISPOSAL

Waste management costs comprise a significant portion of the decommissioning cost estimate and limited future access to disposal sites licensed for receipt of Class B and C wastes introduces a significant level of uncertainty with respect to the appropriateness of existing rate structures for disposal of these wastes. EnergySolutions' approach to estimating waste disposal costs is discussed in the following paragraphs.

Waste Classification

Regulations governing disposal of radioactive waste are stringent in order to ensure control of the waste and preclude adverse impact on public health and safety. At present, low-level radioactive waste (LLRW) disposal is controlled by NRC Regulation 10 CFR 61, which went into effect in December, 1983. This regulation stipulates the criteria for the establishment and operation of shallow-land LLRW burial facilities. Embodied within this new regulation are criteria and classifications for packaging LLRW acceptable for burial at licensed LLRW disposal sites.

For each waste classification, 10 CFR 61 stipulates a specific criteria for physical and chemical properties that the LLRW must meet in order to be accepted at a licensed disposal site. The LLRW disposal criteria of 10 CFR 61 requires that LLRW generators determine the proportional amount of

a number of specific radioactive isotopes present in each container of disposable LLRW. This requirement for isotopic analysis of each container of disposable LLRW is met by employing a combination of analytical techniques such as computerized analyses based upon scaling factors, sample laboratory analyses, and direct assay methods. Having performed an isotopic analysis of each container of disposable LLRW, the waste must then be classified according to one of the classifications (Class A, B, C or Greater Than Class C (GTCC)) as defined in 10 CFR 61.

EnergySolutions' classification of LLRW resulting from decommissioning activities is based on AIF/NESP-036 (Ref. No. 3), NUREG/CR-130 (Ref. No. 16), and recent industry experience. The estimated curie content of the reactor vessel and internals at shutdown is derived from NUREG/CR-130 and adjusted for the different mass of components as well as the MWt rating and period of decay.

Packaging

Selection of the type and quantity of containers required for Class B and C wastes is based on the most restrictive of either curie-content, dose-rate, container weight-limit or container volume-limit. GTCC wastes from segmentation of the reactor vessel internals is packaged in fuel bundle canisters. The selection of the type of containers for Class A waste is based on the transportation mode (rail, truck, barge, etc.) and waste form. The quantity of Class A waste containers is determined from the most restrictive of either container weight-limit or container volume-limit. Large components such as steam generators, pressurizers and reactor recirculation pumps are shipped as their own container with shielding as required.

Container costs are obtained from manufacturers. Shielded transport cask and liner costs are obtained from the cask owners and operators.

Transportation

Transportation routes to processing and disposal facilities are determined based on available transportation modes (truck, rail, barge or combinations). Routes and distances are determined using the Transportation Routing Analysis Geographic Information System (TRAGIS) software developed by the Oak Ridge National Laboratory National Transportation Research Center (Ref. No. 29).

Transportation costs for the selected routes and modes are obtained from vendor quotes or published tariffs whenever possible.

Class A Disposal Options and Rates

EnergySolutions incorporates a variety of waste processing methodologies in its decommissioning cost estimates. Typically, a matrix is developed identifying the methodologies, waste acceptance criteria, transportation costs, and disposal or processing costs at each facility licensed to accept Class A waste. Each waste stream is then allocated to the least expensive disposal option it qualifies for. The costs are adjusted to include packaging and transportation.

The majority of Class A waste qualifies for disposal at EnergySolutions' facility in Clive, Utah. Some large components and metallic wastes are assumed to be processed at either Duratek's plasma arc-furnace facility in Oak Ridge, Tennessee or Duratek's decontamination facility in Memphis, Tennessee. Duratek's facility in Memphis, Tennessee is limited to waste with dose rates less than 200 mRem/hr. In addition, some of the Class A waste from the reactor vessel and reactor internals removal process is assumed to be disposed at a Barnwell (Class B and C) type facility. Disposal and processing costs are obtained from vendor quotes or published rate schedules.

Class B and C Disposal Options and Rates

Currently within the United States there are only two commercial disposal facilities licensed to accept Class B and C LLRW, Duratek's Barnwell facility in Barnwell, South Carolina and the U.S. Ecology facility in Richland, Washington. However, at Barnwell all non-Atlantic Compact waste will be phased out by 2008 and U.S. Ecology only accepts waste from states within the Northwest and Rocky Mountain Compacts.

The Low-Level Waste Policy Act (LLWPA), passed by Congress in 1980, placed the responsibility of LLRW disposal in the hands of individual states. The LLWPA provided a six-year time frame within which each state was required to develop its own means for radioactive disposal. The LLWPA also provided for a group of states to form a compact, which could then establish the means for LLRW disposal on a regional basis.

The intent of the LLWPA was to have new LLRW disposal sites in operation before January 1, 1986, therefore permitting closures of the three existing burial sites located in South Carolina, Washington and Nevada. Since no new disposal sites were in operation by 1986, it is evident that the LLWPA failed to motivate the individual states to comply with its purpose.

On January 15, 1986, Congress amended the LLWPA with passage of Public Law 99-240. In June of 1992 the U.S. Supreme Court ruled that the provisions of the amendment requiring any state to take title to the waste of its generators, if that state had not met its program milestones dates, were null and void. The removal of the "take title" provision has contributed to a lack of significant progress by many States in coming to grips with the problem.

The question then becomes, what disposal rate is to be used in the decommissioning cost estimate for Class B and C waste and where is it to go? Since the cost estimate is based on current or present day dollars, the disposal cost for Class B and C waste should be equivalent to the cost that would be incurred if a new disposal facility were to be licensed and begin operations today. EnergySolutions has reviewed several studies developed in an attempt to quantify the disposal costs associated with a new disposal facility constructed in today's environment. Based on this review, it is EnergySolutions' belief that Class B and C disposal rates based on the published base rate and surcharge structure for the Barnwell facility is the most reasonable and defensible approach. This approach is also based on the fact that NRC requires utilities to update their decommissioning cost estimates every five-years so that changes in disposal options and costs can be taken into account.

Greater Than Class C (GTCC)

Wastes identified as 10 CFR 61 Class A, B and C may be disposed at a near-surface disposal facility. Certain components are highly activated and may exceed the radionuclide concentration limitations for 10 CFR 61 Class C waste. In accordance with 10 CFR 61, these components cannot be disposed in a near-surface LLRW disposal facility and must be transferred to a geologic repository or a similar site approved by the NRC.

Highly activated sections of the reactor vessel internals will result in GTCC waste. Presently, a facility does not exist for the disposal of wastes exceeding 10 CFR 61 Class C limitations. EnergySolutions assumes that the DOE will accept this waste at the Yucca Mountain repository facility along with spent fuel. However, unlike spent fuel the disposal cost is not addressed by DOE's 1-mill/kWhr surcharge. Therefore, EnergySolutions estimates a GTCC waste disposal cost based upon the maximum curie surcharges currently in effect at Barnwell. EnergySolutions assumes that the GTCC waste will be packaged in fuel bundle canisters and either stored in the fuel pool or dry storage containers and be shipped to Yucca Mountain by DOE along with the spent fuel. Additionally, EnergySolutions assumes shipping costs for GTCC waste to be equivalent to the commercial cost of shipping CNS 8-120 casks.

LLRW Volume Reduction

Based on current Class A LLRW disposal rates, EnergySolutions does not assume on-site volume reduction techniques such as waste compaction or an aggressive decontamination, survey and release effort. These activities are not currently considered to be cost effective over disposal.

Non-Radioactive Non-Hazardous Waste Disposal

EnergySolutions assumes that recyclable non-radioactive scrap metal resulting from the decommissioning program will be removed from the site by a scrap metal dealer at no cost to the project. Concrete debris is assumed to be processed by size reduction with removal of structural reinforcing steel and used on-site as engineered fill for voids. All other demolition debris is removed from the site and disposed of at a local construction debris landfill.

Hazardous Waste Disposal

Uncontaminated lead shielding remaining after shutdown was assumed to be removed from its installed locations and shipped off-site by entities having a need for the material. The entities receive the lead at no charge in return for providing the removal and shipping services. Non-Radioactive contaminated surfaces coated with lead based paint will be removed as non-hazardous building demolition debris.

All other chemicals and hazardous materials present at shutdown are assumed to be removed and disposed by the plant staff prior to decommissioning as a normal part of plant operations.

3.5 FINAL STATUS SURVEY

The cost of performing a final status survey (FSS) is based on NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)" (Ref. No. 14). Estimates of MARSSIM Class I, II and III survey designations are based on radiological characterization data furnished by the utility and assumptions regarding contamination resulting from small and large component removal activities. The FSS activity cost calculation includes the in-place remote survey of underground metal and concrete pipe, soil and groundwater sampling and analysis. Estimated costs for NRC and ORISE verification are also included and the NRC review period is incorporated into the project schedule.

3.6 OCCUPATIONAL EXPOSURE

The exposure estimates are calculated considering the anticipated dose levels and manpower requirements for each work activity. EnergySolutions' estimating approach is purposefully conservative both in exposure field levels and exposure time to those fields.

3.7 CONTINGENCY

Contingencies are applied to cost estimates primarily to allow for unknown or unplanned occurrences during the actual program, e.g. increased radioactive waste materials volumes over that expected; equipment breakdowns; weather delays; labor strikes, etc. This is consistent with the definition provided in the U.S. Department of Energy (DOE) Cost Estimating Guide, DOE G 430.1-1, 3-28-97 (DOE G) (Ref. No. 4); Contingency "Covers costs that may result from incomplete design, unforeseen and unpredictable conditions, or uncertainties within the defined project scope. The amount of contingency will depend on the status of design, procurement, and construction; and the complexity and uncertainties of the component parts of the project. Contingency is not to be used to avoid making an accurate assessment of expected costs." EnergySolutions determines site-specific contingency factors, to be applied to each estimate based on industry practices.

The DOE has established a recommended range of contingencies as a function of completeness of program design, DOE G. The ranges are:

<u>Time of Estimate</u>	<u>Contingency Range as a % of Total Estimate</u>
Planning Phase	20-30
Budget	15-25
Title I	10-20
Title II	5-15

A reactor decommissioning program will be conducted under an NRC-approved Quality Assurance Program which meets the requirements of 10 CFR 50, Appendix B of the Code of Federal Regulations. However, the development of the quality assurance program, the performance of work under that program, and the effort required to ensure compliance with the program is already included in the detailed cost estimate. Therefore, *EnergySolutions* does not include quality assurance as an element of the contingency allowance. The same is true for contamination. Where radioactive contamination or activated materials are dealt with, the *EnergySolutions* unit cost factors and associated calculations fully reflect the cost impact of that material, and a separate contamination contingency is not required just due to working with contamination.

One approach to quantification of the unknown/unplanned contingency element is the evaluation of probabilities relative to the most probable cost of each work activity. A skewed binomial distribution is developed for each activity which reflects the lowest reasonable cost (less than 1 percent chance of being lower), the most probable cost and the highest reasonable cost (less than 1 percent chance of being higher). This typically results in a distribution heavily skewed towards the higher than probable cost. Since the initiation of the RSEP Decommissioning Program is over twelve years in the future, the skewness tends to be further accentuated towards the higher end of the distribution. However, since the decommissioning cost estimate will be updated in a 3-5 year period, *EnergySolutions* does not believe that a statistical analysis for this element of contingency is necessary or appropriate at this time.

Another approach to determining the appropriate contingency would be to utilize published values for the specific activities estimated in this report. One source for such published information is AIF/NESP-0036 "Guidelines for Producing Nuclear Plant Decommissioning Cost Estimates" (AIF). This document identifies contingencies for activities specific to a nuclear power plant decommissioning, such as reactor internals removal. The contingencies presented in this document are based on the assumption that the estimated costs are optimistic; therefore, the published contingencies are greater than they would be if the estimated costs were most probable.

With the exception to the system decontamination, reactor vessel and reactor internals removal and disposal the contingencies presented in AIF are consistent with the values presented in DOE G 430.1-1 for a Budget/Title I estimate. The system decontamination, reactor vessel and reactor internals removal and disposal contingencies are significantly higher than the ranges identified by the DOE, even for a planning phase document. This is due to the unique nature of these activities and the relatively small amount of historical data available at the time the AIF document was written.

EnergySolutions has developed contingencies specific to decommissioning estimates utilizing the information presented in AIF and consistent with DOE G. The decommissioning costs generated by *EnergySolutions* are considered most probable and as such, the contingencies presented in AIF were reduced for each category of costs. There has also been a number of large-scale decommissioning projects since AIF was published, providing some historical information that can be used in preparing current estimates. This will allow for additional reduction in contingency costs. The following table provides a summary of the contingency values used in *EnergySolutions'* estimates.

<u>Category</u>	<u>Material & Labor</u>	<u>Pack Ship & Equipment</u>	<u>Bury</u>	<u>Other</u>
Engineering, Utility & DGC	13%			
Contaminated components/Concrete	23%	23%	23%	
Clean components	13%	23%	13%	
Reactor Vessel and Reactor Internals	50%	23%	25%	
Other				15%

3.8 COST REPORTING

Total project costs are aggregated from the distributed activity and undistributed costs into the following categories – labor, materials and equipment, waste disposal, and other costs. Other costs are gross receipt taxes, insurance, license fees, permits and energy. Waste disposal costs are the summation of packaging, transportation, base disposal rate and any applicable surcharges. Health physics (HP) supplies and small tool costs are calculated as a component of each distributed activity costs and included in the category of material and equipment with the exception that HP supplies for the utility HP staff are calculated and reported as an undistributed line item. A line item specific contingency is then calculated for each activity cost element.

4.0 SITE SPECIFIC TECHNICAL APPROACH

4.1 FACILITY DESCRIPTION

Kewaunee is a nuclear powered electrical generating facility consisting of one pressurized water reactors (PWR) located in east central Wisconsin on the west shore of Lake Michigan about 30 miles East South East of Green Bay and about 90 miles North Northeast of Milwaukee. The plant site comprises approximately 908 acres. The power plant is a two loop Westinghouse nuclear steam supply system and a Westinghouse turbine generator. The construction permit was issued for an initial reactor power of 1,650 MWt with an ultimate rating of 1,721.4 MWt. In 2003 a measurement uncertainty recapture power rating was performed that increased the licensed rated power from 1,650 MWt to 1,673 MWt. In 2004, using available plant design margin, a six percent (6%) stretch power uprate was performed that increased the licensed rated power from 1,673 MWt to 1,772 MWt. The current shutdown date is December 21, 2013.

The facility currently does not have an existing Independent Spent Fuel Storage Installation (ISFSI). Spent fuel schedules prepared by Dominion for this study require transfer of spent fuel into MPCs beginning in 2008 in order to maintain full-core offload capacity in the spent fuel pool. This study assumes that an ISFSI of sufficient capacity will be constructed prior to shutdown and that the MPCs will be licensed under the 10 CFR Part 72 general license using the manufacturers Certificate of Compliance. However, in order to terminate the 10 CFR Part 50 license the 10 CFR Part 72 general license will have to be replaced with a site-specific license.

Appendix A provides a list of the Kewaunee systems and structures included in the material inventory for this study.

4.2 DECOMMISSIONING PROCESS

Decommissioning Planning

Planning and preparation for decommissioning will begin immediately following Unit 1 shutdown. Planning activities will be performed by the utility staff supplemented by consulting engineering support. For the scenario involving a separate DGC staff, the DGC staff will also participate in the planning and preparation phase. This approach will achieve the following:

- Allow review and approval of the basic Post-Shutdown Decommissioning Activities Report by the U.S. Nuclear Regulatory Commission prior to planned commencement of dismantling activities.
- Design, fabrication, delivery and testing of special equipment, e.g., remote cutting stations for use on the reactor operating floor, prior to scheduled use.
- Operator training and testing of special processes in advance of earliest possible equipment deployment.
- Deployment and installation of cutting stations, contamination control envelopes and waste handling facilities prior to scheduled use.

Verification that dismantling activities do not introduce unreviewed safety questions by the 10 CFR 50.59 review process.

Site Modifications and Preparations

Site modifications and preparations consist of modification of containment access, construction of change rooms and laundry facilities to handle the increased workforce, asbestos abatement where required, flushing and draining non-essential systems and performing selected chemical decontamination of the nuclear steam supply system.

This study also assumes the incorporation of "cold and dark" methodology. This involves disconnecting the current site electrical system from the off-site source. Construction power will be installed to operate essential systems and decommissioning equipment. This will simplify the removal of systems and components.

Fuel Pool Configuration

An alternative to maintaining the spent fuel pool in its present configuration is to modify the pool support systems to isolate the pool from the balance of the plant. The purpose of the modifications is to eliminate the need for many of the support systems, thereby reducing staff requirements and costs. These modifications include a skid-mounted heat exchanger and cooling system which would be stationed at the pool. Make-up water to the pool would be piped from the normal water supply system. Pool discharge would be via the original coolant discharge system. The fire protection, HVAC, lighting and area monitoring systems would remain operational to the degree needed and be powered from a new independent power line. Backup power for fuel pool cooling will be provided by the station blackout diesel. Backup power to the radiation monitors will be by DC battery, reducing the emergency power requirements.

By reducing the systems necessary to support the spent fuel pool, the operations and maintenance staff required to be on site during the storage period can be greatly reduced. The security boundary for the site during the storage period can also be reduced to the area of the spent fuel pool and modified support systems. This option, while decreasing the annual spent fuel storage costs, will require an initial capital cost for system modification. Past studies have shown this to be a worthwhile investment.

This modification has been incorporated into all scenarios of this study. Approximately one year after shutdown the spent fuel pool systems will be modified to allow use of a skid-mounted cooling and filtration system.

Small Component Removal

For purposes of optimizing the overall decommissioning schedule plant systems are classified into two categories: essential and non-essential. Essential plant systems are systems that are required to function at some point in the decommissioning process or during fuel storage. It follows that non-essential systems have no requirements on them once final shutdown occurs. Non-essential systems may be removed at any time during the decommissioning campaign. Their removal is ideal as a

work leveling tool. This permits the Utility or DGC to flat load his work force and keep them fully utilized. The systems essential to dismantling, such as lighting, ventilation, liquid waste disposal, etc., will be secured and removed from each building when they are no longer required to support dismantling.

Major Component Removal

This study assumes that the steam generators and pressurizers are removed in one-piece. In the case of the steam generators the lower shell is segmented and shipped off-site for decontamination or disposal. The upper shell will be decontaminated on-site and disposed of as non-contaminated scrap metal.

The study is based on segmentation of the reactor internals and a one-piece removal of the reactor pressure vessel. The internals segmentation will utilize proven remotely operated equipment such as an abrasive water jet cutter. The segments will then be packaged, shipped by truck or rail, and buried in accordance with DOT 49 CFR 173-189 (Ref. No. 25) and in accordance with the disposal facilities license.

Major Component Removal Cutting Stations

The cutting stations associated with the critical path activities of vessel internals removal are designed to take full advantage of the available work space on the reactor operating floor and in the spent fuel building.

After spent fuel has been removed from the spent fuel pool a Contamination Control Envelope (CCE) enclosure will be constructed in approximately a 20' x 35' area next to the spent fuel pool. As characteristic of all contamination control envelopes, it has an integral ventilation evacuation system utilizing absolute filters for local contamination control and to maintain a negative pressure in the envelope relative to the spent fuel building. The activities in the CCE include:

- segmentation of the spent fuel storage racks.
- packaging of the spent fuel pool liner.

A second CCE will be constructed at the vessel head laydown areas in the reactor building. The work in this CCE will include:

- welding of closure plate to vessel head.
- welding of closure plate to reactor pressure vessel.

A third CCE constructed at the Fuel Transfer Canal in the reactor building will have controlled environment cutting stations on a temporary bridge spanning the canals, above the reactor internals storage stands. The activities occurring in the canal areas include:

- underwater segmenting of the reactor internals after transfer from the reactor.
- underwater loading of the reactor internals into shipping liners.

Temporary transfer rails will be installed through the equipment hatch of each Reactor Building. The rails will facilitate transfer of loaded cask liners and other heavy equipment from inside the Reactor Building, where items can be handled with the overhead polar crane, to the outside, where they can be lifted onto transport trailers by a crawler crane.

Building Decontamination

Following removal of all activated and contaminated equipment, valves, piping, pumps, electrical equipment and structural material, small components and major components the affected buildings will be decontaminated as required to remove residual radioactivity to the established release limits. EnergySolutions' Unit Cost Factors apply proven chemical and mechanical decontamination methods such as manual decon, hydrolasing, concrete scabbling and vacuum blasting.

Building Demolition

Following NRC review and approval of the Final Status Survey and termination of the 10 CFR Part 50 license the structures not required to support continued operation, maintenance and security for the ISFSI will be demolished using conventional demolition techniques. Structures will be demolished using explosives, demolition hammers and hydraulic shears or universal processors. Structural steel will be cut into shippable lengths and removed from the site for recycling at no cost to the project. Clean concrete will be processed on-site by size reduction and removal of steel reinforcing and used to fill excavated building volumes. Imported fill material will be used to backfill the remaining excavated building volumes to grade level.

Site Restoration

Following building demolition the site will then be graded as required to conform to the surrounding site contour. The disturbed areas will then be hydroseeded with grasses.

4.3 DECOMMISSIONING STAFF

Two staffing scenarios were analyzed for this study. For all scenarios, except Scenarios 5 and 6, the Utility staff will also function as the DGC. For these scenarios the Utility and DGC staffs will be combined into one Utility staff performing the functions of both. The staff included in Scenarios 5 and 6 are comprised of a third party team that includes a separate DGC with contract administration and licensing oversight performed by the Utility, or licensee. Details on the staff levels by functional area during each period are provided in Section 6.0 for each scenario.

4.4 SPENT FUEL MANAGEMENT STAFF

The largest spent fuel staff occurs while the fuel pool is operational during the minimum cooling period and while the fuel assemblies are being transferred to dry storage. Once all spent fuel has been removed from the spent fuel pool the staff is reduced. During spent fuel pool operations and the dry storage period the full-time spent fuel management staff is supplemented with part-time staff to support fuel movements. Details on the staff levels by functional area during each period are provided in Section 6.0 for each scenario.

4.5 SPENT FUEL SHIPMENTS

The schedule for shipment of spent fuel to the DOE repository for each scenario was developed by Dominion for this study. The spent fuel shipping schedules are based in part on the DOE's "Acceptance Priority Ranking & Annual Capacity Report," dated July 2004. (Ref. No. 21). Spent fuel shipping schedules for each scenario are provided in Appendix B.

5.0 BASES AND ASSUMPTIONS

The bases and assumptions pertaining to all the decommissioning scenarios are presented below. Those specific to a scenario are listed in the appropriate section. The generic items are:

1. Component quantities were developed from piping and instrument drawings.
2. Concrete volumes were obtained from detailed plant drawings.
3. The current utility staff size is considered to be sufficiently stable to remain virtually unchanged to end of life. For this reason, the utility staff is assumed to be the same size at the time of shutdown as it was in September 2005. After shutdown the staff will be reduced by about one-third.
4. Subcontractor labor rates including fringe benefit, payroll taxes, overhead and profit were supplied by Dominion for most crafts. These rates were current as of September 2005.
5. Craft labor rates for positions not supplied by Dominion were taken from the 2005 RS Means Labor Rates for the Construction Industry (Ref. No. 23), for Green Bay, Wisconsin.
6. Utility staff positions and fully burdened salary data was supplied by Dominion. These rates were current as of September 2005.
7. Shipping and disposal cost for some of the Class A waste and all of the Class B and C waste reflect a disposal facility approximately 1,198 miles from the plant. The radwaste base disposal rate for this facility is assumed to be \$535/ft³. In addition, the disposal costs of the highly activated components, e.g., the core shroud, include present-day curie surcharges as imposed at the Barnwell facility to more accurately reflect handling costs for highly radioactive material.
8. The majority of the Class A waste to be disposed of or processed is assumed to go to either the EnergySolutions facility, an off-site decontamination facility, or an off-site plasma-arc furnace treatment facility. The following Class A disposal rates were assumed:
 - Standard and Oversized Debris at the Clive Facility - \$120/ft³
 - Containerized Waste Facility at Clive - \$221/ft³
 - Large Components - \$535/ft³
 - Metal Processing - \$6.25/LB
9. Activity labor costs do not include any allowance for delays between activities, nor is there any cost allowance for craft labor retained on-site while waiting for work to become available.
10. All costs, used in these calculations, were current in September 2005. Totals and subtotals have been rounded to significant figures.

11. The costs of all required safety analyses and safety measures for the protection of the general public, the environment, and decommissioning workers are included in the cost estimates. This reflects the requirements of:

10 CFR 20	Standards for Protection Against Radiation
10 CFR 50	Domestic Licensing of Production and Utilization Facilities
10 CFR 61	Licensing Requirements for Land Disposal of Radioactive Waste
10 CFR 71	Packaging of Radioactive Material for Transport
10 CFR 72	Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste
29 CFR 1910	Occupational Safety and Health Standards
49 CFR 170-189	Department of Transportation Regulations Governing the Transport of Hazardous Materials
12. All post shutdown costs necessitated by the presence of stored spent fuel are presented separately.
13. It is assumed under the existing license that shutdown will occur on December 21, 2013.
14. This estimate includes the cost of dry storage MPCs and Horizontal Storage Modules required following shutdown for each scenario in accordance with the spent fuel schedules provided by Dominion. A cost of \$1,049,018 per dry storage MPCs and Horizontal Storage Module is assumed. The estimate does not include the purchase of dry storage MPCs required during operations to maintain full-core off-load capacity in the spent fuel pool, nor does it include the cost of constructing the ISFSI.
15. It is assumed that the dry storage system will be designed to hold spent fuel that has resided in the spent fuel pool for a minimum of five years.
16. Spent fuel shipments to a DOE facility are based on Kewaunee spent fuel inventory, the constraints imposed by each scenario and the spent fuel shipping schedule as determined by Dominion.
17. All spent fuel must remain in the spent fuel pool a minimum of five years before either being shipped to the DOE facility or being transferred to the dry storage facility.
18. For spent fuel assemblies to be shipped to the DOE facility priority will be given to spent fuel assemblies in the spent fuel pool. This will minimize the number of assemblies remaining in dry storage after shutdown.

19. This study has considered the impact of the 9/11/01 terrorist attack to the on-site security concerns. The security guard force included in this estimate is sized accordingly.
20. Scenarios 1 through 4 are based on the Utility acting as the DGC. Scenarios 5 and 6 are based on a third party and DGC performing the decommissioning with contract administration and licensing oversight being performed by the Utility or licensee.
21. All skilled laborers will be supplied by the local union hall and hired by the Utility for Scenarios 1 through 4 and by the DGC for Scenarios 5 and 6.
22. The professional personnel used for the planning and preparation activities will be paid per diem at the rate of \$106.00/day. Since the skilled laborers are being supplied by local union hall they will not be paid per diem.
23. The Kewaunee decommissioning file was reviewed for information on spills, secondary system contamination and contaminated soil. Costs for the remediation of contaminated soil and roof material have been included in this estimate.
24. The utility staff size of 491 Full-Time Equivalents (FTEs) effective as of September 2005 is considered to be sufficiently stable to remain virtually unchanged until permanent shutdown. Of the 491 FTEs 339 are Non-Bargaining employees eligible for severance. Post shutdown severance costs are based on a phased reduction-in-force (RIF). Following shutdown and during Decon Pd 1 a RIF of 180 Non-Bargaining employees will occur. A RIF of 45 Bargaining employees also occurs in Decon Pd 1. Additional RIFs occur throughout the decommissioning and spent fuel management periods as staff levels change between periods.
25. Severance costs for Non-Bargaining employees are based on one month pay for each full year and partial year service, not to exceed 18 months. Medical, Life and Dental benefits furnished by Dominion were assumed to be \$1,500 per employee. It was assumed that all employees were eligible for the maximum severance payment of 18 month of their annual salary. The fully burdened salaries provided by Dominion were reduced by fifteen percent to account for the reduction in the general and administrative and overhead portions of the burdened salary. Post-shutdown severance costs are based on a weighted average annual reduced salary of \$91,884. Severance costs for Bargaining employees is based on the maximum limit of 80 hours for each full years service and an assumed five (5) years average service. An average hourly wage of \$45.62 was assumed.
26. Insurance premiums were supplied by Dominion and adjusted by EnergySolutions to meet the requirements of each period.
27. Gross receipts taxes for the year following shutdown were supplied by Dominion and included in this estimate.

28. Vessel and internals curie estimates were derived from the values for the Reference PWR vessel and internals in NUREG/CR-0130 (Ref. No. 16). These values were adjusted for MWt rating, weight and decay period.
29. The EnergySolutions site-specific classification of radioactive wastes for the Kewaunee Plant identified that the Spent Fuel Assemblies and two components within the reactor vessel (the Core Baffle and the Lower Core Grid Plate) will exceed Class C limitations. Two NUHOMs TN-32 MPCs and Horizontal Storage Modules will be required at an assumed cost of \$1,049,018 each.
30. All transformers on-site following shutdown are assumed to be PCB free.
31. Health Physics technicians used during vessel and internal removal will be supplied by the Utility Staff.
32. For Scenarios 5 and 6, the Third Party staff salaries and the separate DGC staff salaries, including overhead and profit, were determined by EnergySolutions.
33. No PCBs will be on-site at shutdown.
34. Clean building walls and foundations more than three feet below grade may be left in place if there are no voids.
35. It is assumed that all low-level waste currently being accumulated on-site will be removed to a low-level waste processing and/or disposal facility prior to the end of the operating life of the plant. The disposition of such materials is assumed not to be a decommissioning cost.
36. EnergySolutions has included the annual NRC fee for on-site dry storage of \$159,000/yr for all post-shutdown years with dry storage. EnergySolutions has assumed that the site specific 10 CFR Part 72 license will be renewed every 20 years during the dry storage period. The cost for license renewal during decommissioning is included in this estimate.
37. The decommissioning will be performed under the current regulations. These regulations require a Post-Shutdown Decommissioning Activities Report (PSDAR) to be submitted prior to or within two years after permanent shutdown. In addition a certificate of permanent cessation of operations must be submitted to the NRC within 30 days of permanent cessation of operations. Certification of the final core off-load must also be submitted to the NRC upon completion of this activity. Ninety days after the NRC receives the PSDAR and after submittal of both certifications, major decommissioning activities, that meet the criteria of 10 CFR Part 50.59, may be performed, provided the NRC does not notify the Utility of any deficiencies.
38. This study follows the occupational exposure principles of As Low As Reasonably Achievable (ALARA) through the use of productivity loss factors that incorporate such items as the use of respiratory protection and personnel protective clothing. These factors increase the work duration and cost.

39. The following structures are assumed to be required to support ISFSI maintenance, operations, safeguards and security. The structures are demolished following the Part 72 license termination.
- Gate House
 - Office-Warehouse Annex
 - Meteorological Tower
 - Site access roads and a portion of railroad tracks
40. The ISFSI pad, approach apron and NUHOMs Horizontal Storage Modules for the MPC are assumed to be radiologically clean at the end of the ISFSI life. Therefore, the final status survey for termination of the Part 72 license is limited to a verification survey to demonstrate that these areas are "unaffected." Following the Part 72 license termination the ISFSI concrete pad and approach apron are demolished to a depth of 3 feet, backfilled with imported fill material, graded and hydroseeded.
41. The thermal system insulation asbestos abatement costs of \$12,046,871 furnished by Dominion have been incorporated into the study.

6.0 STUDY RESULTS BY SCENARIO

The study results for the six scenarios analyzed are presented in the following sections. The difference in total project costs between the Scenarios 1 through 4 is primarily due to the different assumptions regarding shutdown dates and the opening date for DOE's Yucca Mountain repository. The difference in total project costs between Scenarios 1 and 5 is due to the third party decommissioning which results in higher labor cost. The difference in total project costs between Scenarios 3 and 6 is due to the third party decommissioning which results in higher labor cost.

6.1 SCENARIO 1 – BASE CASE

This scenario is based on a DECON methodology and post-shutdown dry storage of spent fuel. Shutdown occurs on December 21, 2013. The Yucca Mountain repository is assumed to begin accepting spent fuel in 2012.

Spent Fuel Shipping Schedule

The spent fuel shipping schedules included in Appendix B were furnished by Dominion and modified to include the disposition of one (1) MPC containing GTCC waste. Spent fuel shipments to the DOE repository from the spent fuel pool will begin in 2014. During operations spent fuel will be transferred to MPCs as required to maintain full-core off-load capacity. All spent fuel and GTCC will be removed from the ISFSI by 2042. A site-specific 10 CFR Part 72 ISFSI license will be issued in 2019 and renewed once in 2039 during dry storage.

Cost and Schedule Summary

Figure 6-1 is a summary project schedule. A detailed schedule is provided in Appendix C. The schedule is based on the spent fuel shipping constraints. The 10 CFR Part 50 license is terminated by 2021 with the ISFSI 10 CFR Part 72 license being terminated by 2043. Table 6-1 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel and Greenfield activities. A detailed cost table is provided in Appendix D and a table of annual cash flows is provided in Appendix E. Appendix F provides an annual cash flow with the cost broken out by labor, equipment, waste, other and contingency.

Project Staffing

This scenario is based on the utility acting as the DGC. The Utility staffing levels by organizational department and function for each period are provided in Table 6-2. The number of craft, engineering, and supervisory manhours required for each activity are presented in Table 6-3. The hours represent all non-utility staff labor hours associated with dismantling, decontamination, removal, packaging, and shipment of the listed components for both units. The estimated occupational exposure associated with this scenario is provided in Table 6-4.

Waste Disposal Volumes

Waste disposal is a significant element of the decommissioning project. The estimated cubic feet of waste are summarized as follows:

Class A	105,610
Class B	1,688
Class C	1,299
Greater than Class C	168

Waste disposal volumes and costs itemized by packaging, transportation, surcharges and disposal costs by waste class and facility are provided in Table 6-5. The waste disposal cost provided in Table 6-5 does not include contingency.

Scenario Specific Assumptions

All assumptions for this scenario are identified in Section 5.0.

Figure 6-1
Scenario 1 Summary Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2012

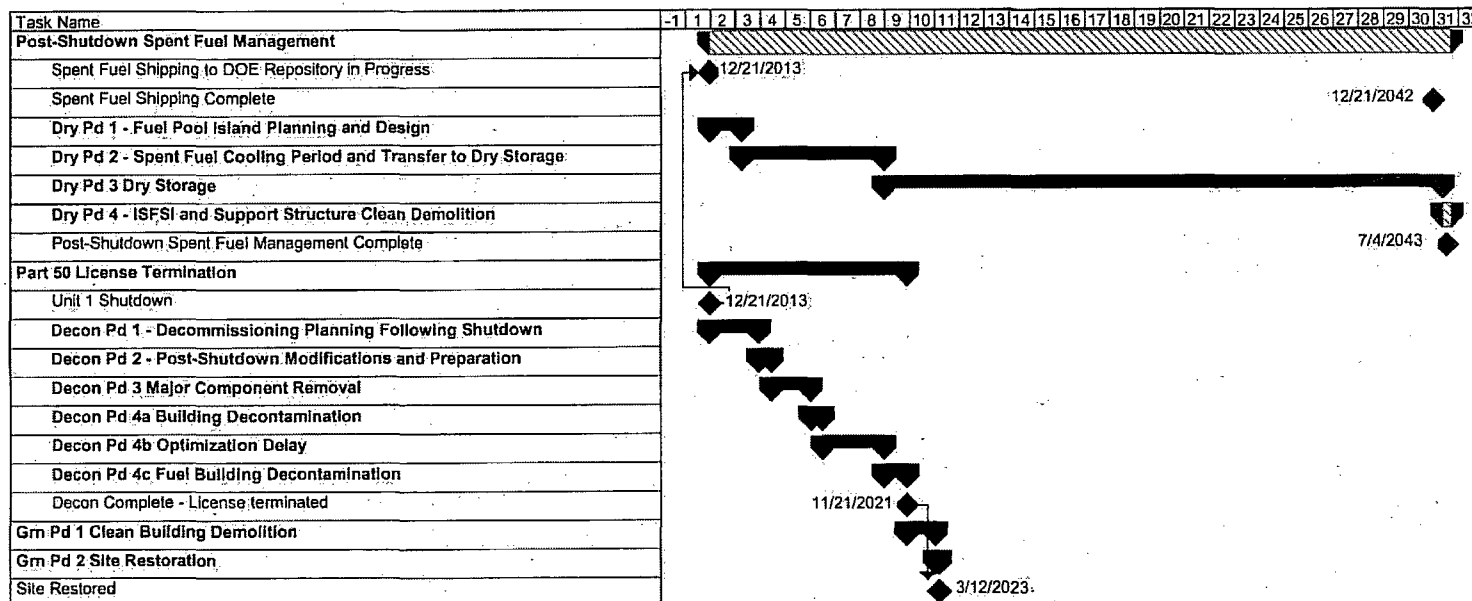


TABLE 6-1
SCENARIO 1 COST AND SCHEDULE SUMMARY
(Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Total Cost
A. License Termination (50.75(c))					
Decon Pd 1	Decommissioning Planning	12/21/2013	12/11/2015	1.97	\$93,122
Decon Pd 2	Post-Shutdown Modifications and Preparations	12/11/2015	6/17/2016	0.51	\$46,156
Decon Pd 3	Major Component Removal	6/17/2016	1/6/2018	1.55	\$112,187
Decon Pd 4a	Building Decontamination	1/6/2018	6/30/2018	0.47	\$35,111
Decon Pd 4b	Optimization Delay for Removal of Fuel from Pool	6/30/2018	12/21/2020	2.47	\$17,806
Decon Pd 4c	Balance of Decontamination and Final Status Survey	12/21/2020	11/21/2021	0.91	\$29,931
Account Total				7.88	\$334,313
B. Spent Fuel (50.54(bb))					
Dry Pd 1	Fuel Pool Island Planning and Design	12/21/2013	4/3/2015	1.28	\$20,383
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	4/3/2015	12/21/2020	5.71	\$87,840
Dry Pd 3	Dry Storage	12/21/2020	5/9/2043	22.37	\$119,361
Dry Pd 4	ISFSI Demolition and Final Site Restoration	5/10/2043	9/12/2043	0.34	\$4,102
Account Total				29.70	\$231,686
C. Greenfield (g)					
Gm Pd 1	Clean Building Demolition	11/21/2021	1/15/2023	1.14	\$14,047
Gm Pd 2	Site Restoration	1/15/2023	3/12/2023	0.15	\$5,123
Account Total				1.29	\$19,170
Scenario Total					\$585,169

**TABLE 6-2
SCENARIO 1 STAFF LEVELS**

License Termination – 50.75(c) Utility Staff

Department	Decon Pd 1	Decon Pd 2	Decon Pd 3	Decon Pd 4a	Decon Pd 4b	Decon Pd 4c
Administration	37	37	26	18		11
Engineering	38	38	24	22	1	15
Health Physics	33	33	40	38	3	12
Management	2	2	2	2	1	1
Plant Maintenance	27	27	16	5	3	5
Plant Operations	25	25	32	17		6
Quality Assurance	9	9	7	4		4
Security Administration	2	2	2	2	1	2
Security Guard Force	12	12	12	12	6	12
Waste Operations			8	8		4
	185	185	169	128	15	72

Spent Fuel - 50.54(bb) Utility Staff

Department	Dry Pd 1	Dry Pd 2	Dry Pd 3	Dry Pd 4
Additional Staff for Spent Fuel				
Shipping			2	
Administration				1.2
Engineering			1	2
Fuel Pool Maintenance and Operation Staff	26	26		
Health Physics			4	1.5
Management				0.25
Plant Maintenance			2	
Quality Assurance				0.5
Security Admin	5	5	5	0.5
Security Guard Force	50	50	25	5
Waste Operations				0.5
	81	81	39	11.45

Greenfield - (g) Utility Staff

Department	Gm Pd 1	Gm Pd 2
Administration	10	9
Engineering	13	8
Management	1	
Quality Assurance	1	1
Security Admin	1	1
Security Guard Force	5	5
	31	24

TABLE 6-3
SCENARIO 1 MANHOUR REQUIREMENTS

Period No.	Period Description	Manhours
Decon Pd 1	Decommissioning Planning	82,021
Decon Pd 2	Post-Shutdown Modifications and Preparations	54,157
Decon Pd 3	Major Component Removal	266,915
Decon Pd 4a	Building Decontamination	32,443
Decon Pd 4c	Balance of Decontamination and Final Status Survey	110,510
Dry Pd 1	Fuel Pool Island Planning and Design	23,856
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	48,986
Dry Pd 3	Dry Storage	1,437
Dry Pd 4	ISFSI Demolition and Final Site Restoration	11,910
Grn Pd 1	Clean Building Demolition	104,184
Grn Pd 2	Site Restoration	1,139

TABLE 6-4
SCENARIO 1 ESTIMATED OCCUPATIONAL EXPOSURE

Description	Manhours	Total Exposure
		Man-Rem
Contaminated Nonessential Systems	13,911	34.78
Contaminated Essential Systems	26,351	131.76
Vessel Internals	44,362	166.36
Reactor Vessel	10,060	37.73
Vessel Insulation	679	6.79
Structure Decontamination	51,484	128.71
Steam Generators	33,741	84.35
Pressurizer	6,851	17.13
Baseline Radiation Survey		
a. Buildings	3,573	8.93
b. System Hot Spots Estimate	384	0.48
c. Contaminated Systems Internal	1,580	0.79
d. Reactor Vessel Surface	200	3.00
e. Vessel Internals Contact dose Estimate	480	7.20
Decontaminate Piping Hot Spots	16,192	80.96
Flush & Drain Nonessential Systems	152	0.15
Remove Spent Fuel Racks		
a. Setup Press Shears	288	0.72
b. Hydrolase racks	9,841	49.20
c. Remove Racks	720	1.80
d. Volume Reduction	9,640	12.05
Waste Transfer & Loading	49,170	43.02
	279,659	815.91

TABLE 6-5
SCENARIO 1 WASTE DISPOSAL VOLUMES
(Cost Excludes Contingency)

Facility and Waste Class	Waste Weight (LBs)	Waste Volume (CF)	Burial Volume (CF)	Packaging Cost	Transportation Cost	Surcharge Cost	Base Burial Cost	Total Disposal Cost
Barnwell								
Class A	1,884,454	16,580	21,967	\$610,984	\$657,166	\$2,404,187	\$11,402,869	\$15,075,205
Class B	140,441	1,167	1,688	\$115,116	\$235,810	\$2,940,066	\$1,088,409	\$4,379,401
Class C	113,703	283	1,299	\$0	\$748,000	\$5,383,157	\$763,730	\$6,894,887
GTCC	28,587	58	168	\$14,828	\$34,000	\$1,620,531	\$89,914	\$1,759,272
	2,167,185	18,088	25,122	\$740,928	\$1,674,976	\$12,347,941	\$13,344,922	\$28,108,765
EnergySolutions								
Class A CWF	25,455	2,425	5,538	\$33,280	\$69,831	\$0	\$5,635,572	\$5,738,683
Class A Debris	6,773,297	63,975	65,444	\$103,488	\$2,576,170	\$0	\$8,342,138	\$11,021,796
	6,798,752	66,400	70,982	\$136,768	\$2,646,001	\$0	\$13,977,710	\$16,760,479
Duratek Memphis								
Class A	1,235,000	10,784	11,280	\$55,000	\$325,000	\$0	\$7,718,750	\$8,098,750
Duratek Oak Ridge								
Class A	253,276	1,388	1,388	\$2,547	\$44,265	\$0	\$1,139,742	\$1,186,554
Debris Landfill	13,687,562	136,876	136,876	\$0	\$0	\$0	\$321,144	\$321,144
On-Site Fill	172,461,150	1,897,073	1,897,073	\$0	\$0	\$0	\$603,614	\$603,614
Scrap Metal	32,689,694	375,189	375,189	\$0	\$0	\$0	\$0	\$0
Asbestos	278,220	4,637	4,637	\$0	\$0	\$0	\$525,638	\$525,638
Grand Total	229,570,839	2,510,435	2,522,547	\$935,243	\$4,690,242	\$12,347,941	\$37,631,520	\$55,604,944

6.2 SCENARIO 2 – BASE CASE, EXCEPT REPOSITORY OPENS IN 2017

This scenario is identical to the Base Case with the exception the Yucca Mountain repository is assumed to begin accepting spent fuel in 2017.

Spent Fuel Shipping Schedule

The spent fuel shipping schedules included in Appendix B were furnished by Dominion and modified to include the disposition of one (1) MPC containing GTCC waste. The spent fuel schedule for this scenario is identical to Scenario 1 except that the repository begins accepting spent fuel five years later in 2019 and spent fuel shipping is completed in 2047. As with Scenario 1 the cost of the 10 CFR Part 72 ISFSI site-specific license and renewal is included.

Cost and Schedule Summary

Figure 6-2 is a summary project schedule. A detailed schedule is provided in Appendix C. The schedule is based on the spent fuel shipping constraints. The 10 CFR Part 50 license is terminated by 2021 with the 10 CFR Part 72 ISFSI license being terminated by 2048. Table 6-6 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel and Greenfield activities.

Project Staffing

The project utility staffing, craft manhours and occupational exposures for this scenario are identical to Scenario 1.

Waste Disposal Volumes

Waste disposal volumes for this scenario are identical to Scenario 1 provided in Table 6-5.

Scenario Specific Assumptions

All assumptions for this scenario are identified in Section 5.0.

Figure 6-2
Scenario 2 Summary Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2017

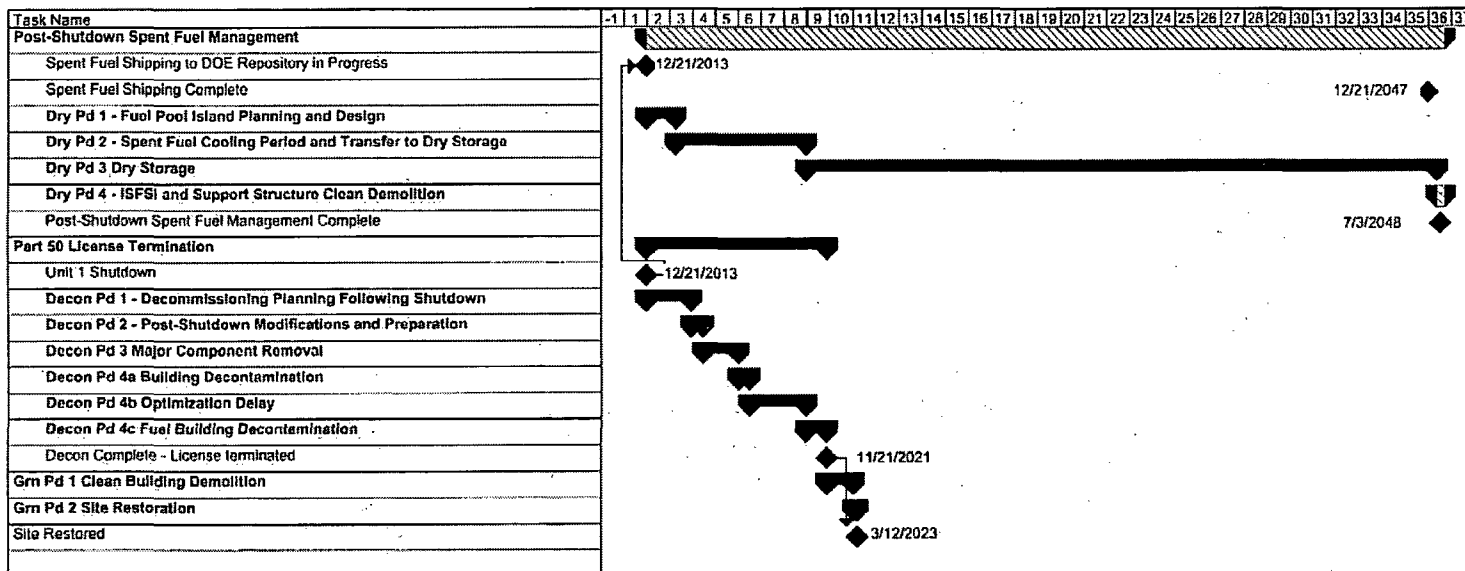


TABLE 6-6
SCENARIO 2 COST AND SCHEDULE SUMMARY
(Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Total Cost
A. License Termination (50.75(c))					
Decon Pd 1	Decommissioning Planning	12/21/2013	12/11/2015	1.97	\$93,122
Decon Pd 2	Post-Shutdown Modifications and Preparations	12/11/2015	6/17/2016	0.51	\$46,156
Decon Pd 3	Major Component Removal	6/17/2016	1/6/2018	1.55	\$112,187
Decon Pd 4a	Building Decontamination	1/6/2018	6/30/2018	0.47	\$35,111
Decon Pd 4b	Optimization Delay for Removal of Fuel from Pool	6/30/2018	12/21/2020	2.47	\$17,806
Decon Pd 4c	Balance of Decontamination and Final Status Survey	12/21/2020	11/21/2021	0.91	\$29,931
Account Total				7.88	\$334,313
B. Spent Fuel (50.54(bb))					
Dry Pd 1	Fuel Pool Island Planning and Design	12/21/2013	4/3/2015	1.28	\$20,383
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	4/3/2015	12/21/2020	5.71	\$103,324
Dry Pd 3	Dry Storage	12/21/2020	5/8/2048	27.37	\$145,158
Dry Pd 4	ISFSI Demolition and Final Site Restoration	5/8/2048	9/11/2048	0.34	\$4,521
Account Total				34.70	\$273,386
C. Greenfield (g)					
Grn Pd 1	Clean Building Demolition	11/21/2021	1/15/2023	1.14	\$14,047
Grn Pd 2	Site Restoration	1/15/2023	3/12/2023	0.15	\$5,123
Account Total				1.29	\$19,170
Scenario Total					\$626,869

6.3 SCENARIO 3 – BASE CASE, EXCEPT LICENSE EXTENSION

This scenario is identical to the Base Case with the exception of a twenty-year license extension and the differences in spent fuel shipping schedules attributed to the longer operating life.

Spent Fuel Shipping Schedule

The spent fuel shipping schedules included in Appendix B were furnished by Dominion and modified to include the disposition of one (1) MPC containing GTCC waste. The number of post-shutdown MPCs required for spent fuel assemblies is reduced from eighteen (18) required for Scenario 1 to eleven (11). As with Scenario 1 the cost of the 10 CFR Part 72 ISFSI site-specific license and renewal is included.

Cost and Schedule Summary

Figure 6-3 is a summary project schedule. A detailed schedule is provided in Appendix C. The schedule is based on the spent fuel shipping constraints. The 10 CFR Part 50 license is terminated by 2041 and the 10 CFR Part 72 ISFSI license would be terminated in 2059. Table 6-7 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel and Greenfield activities.

Project Staffing

This project staffing for this scenario is identical to Scenario 1.

Waste Disposal Volumes

Waste disposal volumes for this scenario are identical to Scenario 1.

Scenario Specific Assumptions

All assumptions for this scenario are identified in Section 5.0.

Figure 6-3
Scenario 3 Summary Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2012

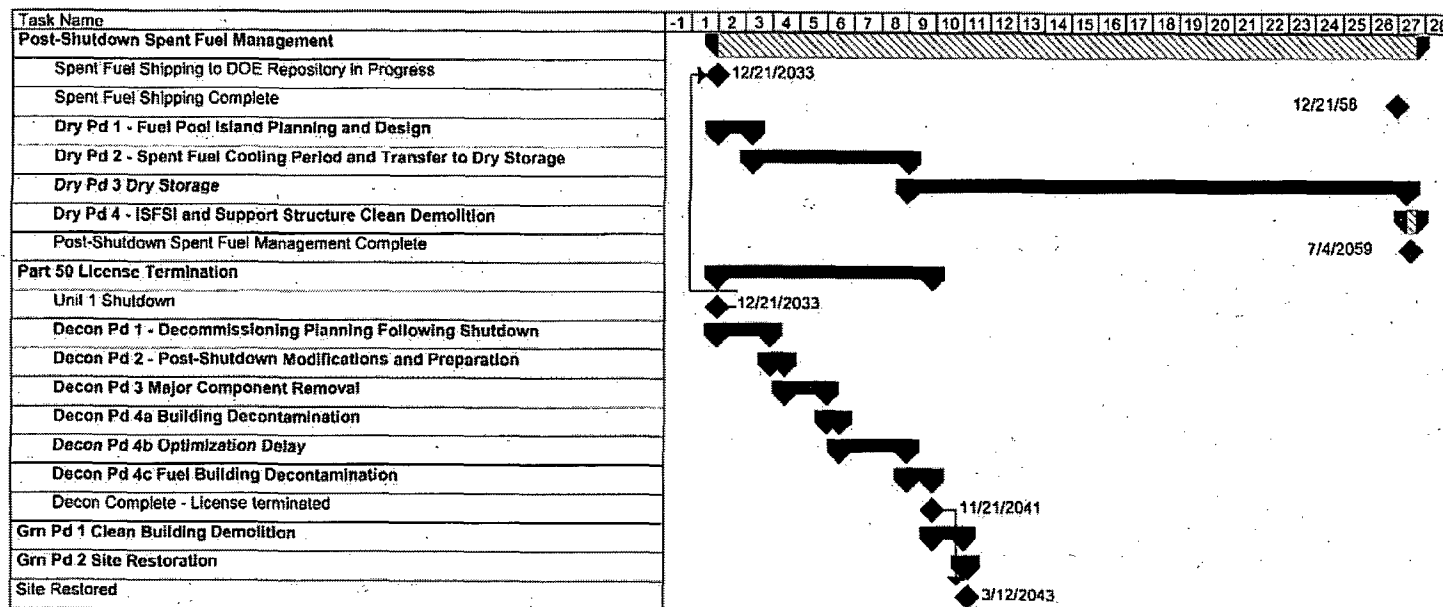


TABLE 6-7
SCENARIO 3 COST AND SCHEDULE SUMMARY
(Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Total Cost
A. License Termination (50.75(c))					
Decon Pd 1	Decommissioning Planning	12/21/2033	12/11/2035	1.97	\$93,122
Decon Pd 2	Post-Shutdown Modifications and Preparations	12/11/2035	6/17/2036	0.51	\$46,156
Decon Pd 3	Major Component Removal	6/17/2036	1/6/2038	1.55	\$112,187
Decon Pd 4a	Building Decontamination	1/6/2038	6/30/2038	0.47	\$35,111
Decon Pd 4b	Optimization Delay for Removal of Fuel from Pool	6/30/2038	12/21/2040	2.47	\$17,806
Decon Pd 4c	Balance of Decontamination and Final Status Survey	12/21/2040	11/21/2041	0.91	\$29,931
Account Total				7.88	\$334,313
B. Spent Fuel (50.54(bb))					
Dry Pd 1	Fuel Pool Island Planning and Design	12/21/2033	4/3/2035	1.28	\$20,383
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	4/3/2035	12/21/2040	5.71	\$78,808
Dry Pd 3	Dry Storage	12/21/2040	5/9/2059	18.37	\$98,725
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	5/9/2059	9/12/2059	0.34	\$3,867
Account Total				25.70	\$201,783
C. Greenfield (g)					
Grn Pd 1	Clean Building Demolition	11/21/2041	1/15/2043	1.14	\$14,047
Grn Pd 2	Site Restoration	1/15/2043	3/12/2043	0.15	\$5,123
Account Total				1.29	\$19,170
Scenario Total					\$555,266

6.4 SCENARIO 4 – BASE CASE, EXCEPT LICENSE EXTENSION AND REPOSITORY OPEN IN 2017

This scenario is identical to the Scenario 2 with the exception of a twenty-year license extension and the differences in spent fuel shipping schedules attributed to the longer operating life.

Spent Fuel Shipping Schedule

The spent fuel shipping schedules included in Appendix B were furnished by Dominion and modified to include the disposition of one (1) MPC containing GTCC waste. The number of post-shutdown MPCs required for spent fuel assemblies is reduced from thirty (30) required for Scenario 2 to fourteen (14). As with Scenario 2 the cost of the 10 CFR Part 72 ISFSI site-specific license and renewal is included.

Cost and Schedule Summary

Figure 6-4 is a summary project schedule. A detailed schedule is provided in Appendix C. The schedule is based on the spent fuel shipping constraints. The 10 CFR Part 50 license is terminated by 2041 and the 10 CFR Part 72 ISFSI license would be terminated in 2064. Table 6-8 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel and Greenfield activities.

Project Staffing

This project staffing for this scenario is identical to Scenario 1.

Waste Disposal Volumes

Waste disposal volumes for this scenario are identical to Scenario 1.

Scenario Specific Assumptions

All assumptions for this scenario are identified in Section 5.0.

Figure 6-4
Scenario 4 Summary Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2017

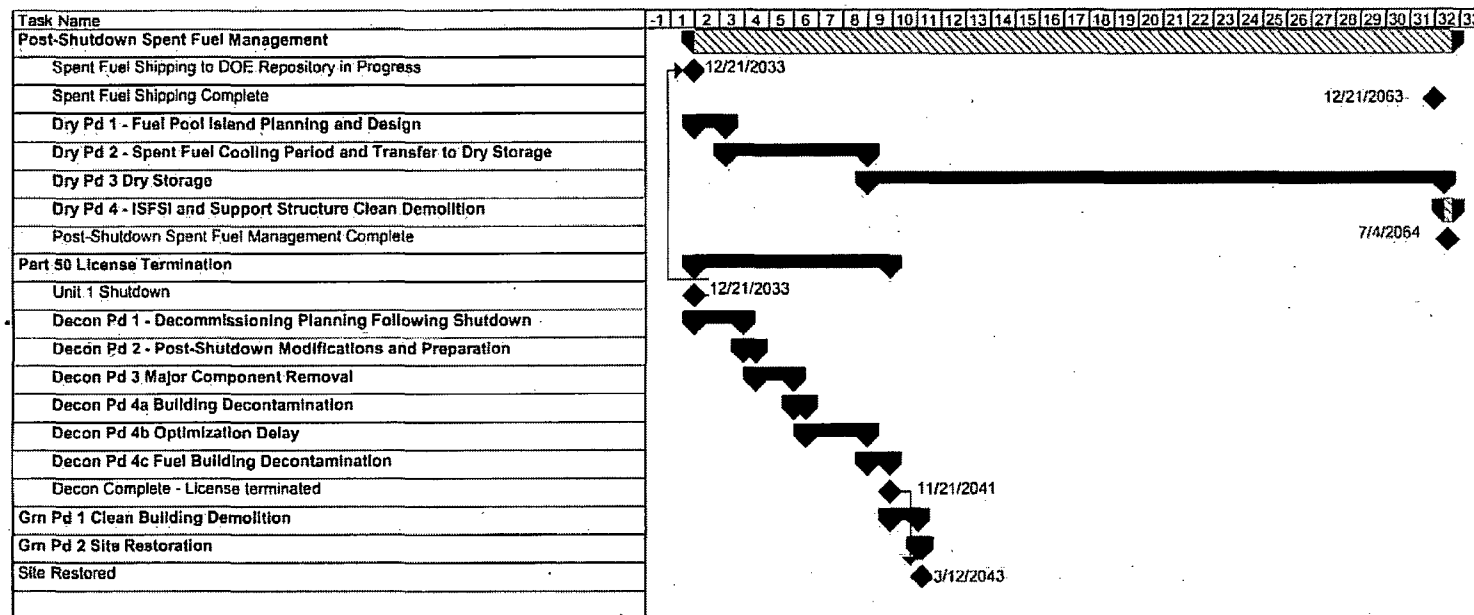


TABLE 6-8
SCENARIO 4 COST AND SCHEDULE SUMMARY
(Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Total Cost
A. License Termination (50.75(c))					
Decon Pd 1	Decommissioning Planning	12/21/2033	12/11/2035	1.97	\$93,122
Decon Pd 2	Post-Shutdown Modifications and Preparations	12/11/2035	6/17/2036	0.51	\$46,156
Decon Pd 3	Major Component Removal	6/17/2036	1/6/2038	1.55	\$112,187
Decon Pd 4a	Building Decontamination	1/6/2038	6/30/2038	0.47	\$35,111
Decon Pd 4b	Optimization Delay for Removal of Fuel from Pool	6/30/2038	12/21/2040	2.47	\$17,806
Decon Pd 4c	Balance of Decontamination and Final Status Survey	12/21/2040	11/21/2041	0.91	\$29,931
Account Total				7.88	\$334,313
B. Spent Fuel (50.54(bb))					
Dry Pd 1	Fuel Pool Island Planning and Design	12/21/2033	4/3/2035	1.28	\$20,383
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	4/3/2035	12/21/2040	5.71	\$82,679
Dry Pd 3	Dry Storage	12/21/2040	5/9/2064	23.38	\$124,528
Dry Pd 4	ISFSI Demolition and Final Site Restoration	5/9/2064	9/12/2064	0.34	\$4,074
Account Total				30.71	\$231,664
C. Greenfield (g)					
Grn Pd 1	Clean Building Demolition	11/21/2041	1/15/2043	1.14	\$14,047
Grn Pd 2	Site Restoration	1/15/2043	3/12/2043	0.15	\$5,123
Account Total				1.29	\$19,170
Scenario Total					\$585,147

6.5 SCENARIO 5 – BASE CASE, EXCEPT DECOMMISSIONING PERFORMED BY THIRD PARTY

This scenario is identical to the Base Case with the exception that decommissioning is performed by a third party.

Spent Fuel Shipping Schedule

The spent fuel shipping schedule is identical to that shown for Scenario 1 in Appendix B.

Cost and Schedule Summary

The summary project schedule is identical to that shown for Scenario 1 in Figure 6-1. Table 6-9 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel and Greenfield activities. The difference in costs between Scenario 1 and Scenario 5 is entirely attributed to the difference in staffing costs.

Project Staffing

This scenario is based on a third party and DGC performing all post-shutdown spent fuel management, decommissioning and Greenfield activities. The utility, or licensee, will perform contract administration and regulatory oversight of the third party and DGC. The Utility staffing levels by organizational department and function for each period are provided in Table 6-10. The third party and DGC staff levels are shown in Table 6-11. The manhours and occupational exposures are identical to Scenario 1 and are provided in Tables 6-3 and 6-4, respectively.

Waste Disposal Volumes

Waste disposal volumes for this scenario are identical to Scenario 1 provided in Table 6-5.

Scenario Specific Assumptions

In addition to the assumptions identified in Section 5.0, this scenario is based on the following assumptions:

1. A third party and DGC performing all post-shutdown spent fuel management, decommissioning and Greenfield activities.
2. The utility, or licensee, will perform contract administration and regulatory oversight of the third party and DGC.

TABLE 6-9
SCENARIO 5 COST AND SCHEDULE SUMMARY
(Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Total Cost
A. License Termination (50.75(c))					
Decon Pd 1	Decommissioning Planning	12/21/2013	12/11/2015	1.97	\$124,764
Decon Pd 2	Post-Shutdown Modifications and Preparations	12/11/2015	6/17/2016	0.51	\$52,867
Decon Pd 3	Major Component Removal	6/17/2016	1/6/2018	1.55	\$124,486
Decon Pd 4a	Building Decontamination	1/6/2018	6/30/2018	0.47	\$35,701
Decon Pd 4b	Optimization Delay for Removal of Fuel from Pool	6/30/2018	12/21/2020	2.47	\$8,819
Decon Pd 4c	Balance of Decontamination and Final Status Survey	12/21/2020	11/21/2021	0.91	\$31,260
Account Total				7.88	\$377,897
B. Spent Fuel (50.54(bb))					
Dry Pd 1	Fuel Pool Island Planning and Design	12/21/2013	4/3/2015	1.28	\$23,540
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	4/3/2015	12/21/2020	5.71	\$101,938
Dry Pd 3	Dry Storage	12/21/2020	5/9/2043	22.37	\$144,846
Dry Pd 4	ISFSI Demolition and Final Site Restoration	5/9/2043	9/12/2043	0.34	\$2,308
Account Total				29.70	\$272,632
C. Greenfield (g)					
Grn Pd 1	Clean Building Demolition	11/21/2021	1/15/2023	1.14	\$20,260
Grn Pd 2	Site Restoration	1/15/2023	3/12/2023	0.15	\$1,651
Account Total				1.29	\$21,911
Scenario Total					\$672,440

**TABLE 6-10
SCENARIO 5 UTILITY STAFF LEVELS**

License Termination – 50.75(c) Utility Staff

Department	Decon Pd 1	Decon Pd 2	Decon Pd 3	Decon Pd 4a	Decon Pd 4b	Decon Pd 4c
Contract Administration	1	1.25	1.25	1.25	1.25	1.25
Licensing	0.5	1	1	1	1	2
	1.5	2.25	2.25	2.25	2.25	3.25

Spent Fuel – 50.54(bb) Utility Staff

Department	Dry Pd 1	Dry Pd 2	Dry Pd 3	Dry Pd 4
Contract Administration			0.2	0.2
Licensing			0.2	0.2
			0.4	0.4

Greenfield – (g) Utility Staff

Department	Gm Pd 1	Gm Pd 2
Contract Administration	0.2	0.2
Licensing	0.2	0.2
	0.4	0.4

TABLE 6-11
SCENARIO 5 THIRD PARTY STAFF LEVELS

License Termination – 50.75(c) Third Party Staff

Department	Decon Pd 1	Decon Pd 2	Decon Pd 3	Decon Pd 4a	Decon Pd 4b	Decon Pd 4c
Administration	25	25	14	12		5
Engineering	31	31	17	15	1	9
Health Physics	27	27	22	32	3	6
Management	2	2	2	2	1	1
Plant Maintenance	27	27	16	5	3	5
Plant Operations	25	25	32	17		6
Quality Assurance	5	5	3	1		1
Security Administration	2	2	2	2	1	2
Security Guard Force	12	12	12	12	6	12
Decommissioning General Contractor	76	76	97	84		41
	232	232	217	182	15	88

Spent Fuel - 50.54(bb) Third Party Staff

Department	Dry Pd 1	Dry Pd 2	Dry Pd 3	Dry Pd 4
Additional Staff for Spent Fuel Shipping			2	
Administration				1.2
Engineering			1	1
Fuel Pool Maintenance and Operation Staff	26	26		
Health Physics			4	
Management				0.25
Plant Maintenance			2	
Quality Assurance				
Security Admin	5	5	5	0.5
Security Guard Force	50	50	25	5
Decommissioning General Contractor				3.5
	81	81	39	11.45

Greenfield - (g) Third Party Staff

Department	Gm Pd 1	Gm Pd 2
Administration	6	5
Engineering	7	2
Management	1	1
Security Admin	1	1
Security Guard Force	5	5
Decommissioning General Contractor	37	27
	57	41

6.6 SCENARIO 6 – BASE CASE, EXCEPT 20-YEAR LICENSE EXTENSION AND DECOMMISSIONING PERFORMED BY THIRD PARTY

This scenario is identical to the Scenario 2 with the exception that decommissioning is performed by a third party.

Spent Fuel Shipping Schedule

The spent fuel shipping schedule is identical to that shown for Scenario 3 in Appendix B.

Cost and Schedule Summary

The summary project schedule is identical to that shown for Scenario 3 in Figure 6-3. Table 6-12 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel and Greenfield activities. The difference in costs between Scenario 3 and Scenario 6 is entirely attributed to the difference in staffing costs.

Project Staffing

The project staffing for Scenario 6 is identical to Scenario 5. The Utility staffing levels by organizational department and function are the same as shown in Table 6-10. The third party and DGC staff levels are the same as shown in Table 6-11. The manhours and occupational exposures are identical to Scenario 1 and are provided in Tables 6-3 and 6-4, respectively.

Waste Disposal Volumes

Waste disposal volumes for this scenario are identical to Scenario 1 provided in Table 6-5.

Scenario Specific Assumptions

In addition to the assumptions identified in Section 5.0, this scenario is based on the following assumptions:

1. A third party and DGC performing all post-shutdown spent fuel management, decommissioning and Greenfield activities.
2. The utility, or licensee, will perform contract administration and regulatory oversight of the third party and DGC.

TABLE 6-12
SCENARIO 6 COST AND SCHEDULE SUMMARY
(Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Total Cost
A. License Termination (50.75(c))					
Decon Pd 1	Decommissioning Planning	12/21/2033	12/11/2035	1.97	\$124,764
Decon Pd 2	Post-Shutdown Modifications and Preparations	12/11/2035	6/17/2036	0.51	\$52,867
Decon Pd 3	Major Component Removal	6/17/2036	1/6/2038	1.55	\$124,486
Decon Pd 4a	Building Decontamination	1/6/2038	6/30/2038	0.47	\$35,701
Decon Pd 4b	Optimization Delay for Removal of Fuel from Pool	6/30/2038	12/21/2040	2.47	\$8,819
Decon Pd 4c	Balance of Decontamination and Final Status Survey	12/21/2040	11/21/2041	0.91	\$31,260
Account Total				7.88	\$377,897
B. Spent Fuel (50.54(bb))					
Dry Pd 1	Fuel Pool Island Planning and Design	12/21/2033	4/3/2035	1.28	\$23,540
Dry Pd 2	Spent Fuel Cooling and Transfer to Dry Storage	4/3/2035	12/21/2040	5.71	\$92,906
Dry Pd 3	Dry Storage	12/21/2040	5/9/2059	18.37	\$119,104
Dry Pd 4	ISFSI Demolition and Final Site Restoration	5/9/2059	9/12/2059	0.34	\$2,068
Account Total				25.70	\$237,618
C. Greenfield (g)					
Grn Pd 1	Clean Building Demolition	11/21/2041	1/15/2043	1.14	\$20,260
Grn Pd 2	Site Restoration	1/15/2043	3/12/2043	0.15	\$1,651
Account Total				1.29	\$21,911
Scenario Total					\$637,426

7.0 REFERENCES

1. Manion, W.J., et. al., AIF/NESP-009, "An Engineering Evaluation of Nuclear Power Reactor Decommissioning Alternatives", November 1976.
2. Manion, W.J., et. al., DOE/EM-0142P, "Decommissioning Handbook," March 1994.
3. AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," May 1986.
4. DOE G 430.1-1, "Cost Estimating Guide."
5. NRC Rules and Regulations, 10 CFR 0-171.
6. NRC Regulatory Guide 1.202, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors," February 2005.
7. NRC Regulatory Guide 1.159, Revision 1, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors," February 2002.
8. NRC Regulatory Guide 1.184, "Decommissioning of Nuclear Power Reactors," July 2000.
9. NRC Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors," January 1999.
10. NRC Regulatory Guide 1.191, "Fire Protection Program for Nuclear Power Plants During Decommissioning and Permanent Shutdown," May 2001.
11. NUREG 1713, "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors, Final Report," October 2004.
12. Federal Register, Vol. 70, No. 101, May 26, 2005, NRC 10 CFR Parts 170 and 171 Revision of Fee Schedules; Fee Recovery for FY 2005, Final Rule.
13. NUREG-1307, Rev 11, "Report on Waste Burial Charges."
14. NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," August 2000.
15. NRC, Branch Technical Position on Site Characterization for Decommissioning, Draft, November 1994.

16. R.I. Smith, G.J. Konzek, and W.E. Kennedy, Jr., "Technology, Safety and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station," NUREG/CR-0130, Prepared by Pacific Northwest Laboratory, June 1978 (Addendum 1, July 1979; Addendum 2, July 1983; Addendum 3 September 1984; Addendum 4, July 1988).
17. G.J. Konzek et al., "Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station," NUREG/CR-5884, November 1995.
18. NRC Regulatory Guide 1.185, "Standard Format and Content for Post-Shutdown Decommissioning Activities Report," July 2000.
19. ANL-89/31, An Evaluation of Alternative Reactor Vessel Cutting Technologies for the Experimental Boiling Water Reactor at Argonne National Laboratory, December 1989.
20. NEI 98-01, "Industry Spent Fuel Storage Handbook," May 1998.
21. DOE/RW-0567, "Acceptance Priority Ranking & Annual Capacity Report," July 2004.
22. R.S. Means, "Building Construction Cost Data," 2005.
23. R.S. Means, "Labor Rates for the Construction Industry," 2005.
24. Barnwell Burial Rates, Chem-Nuclear Systems, Columbia, South Carolina.
25. Department of Transportation, 49CFR 173-189.
26. DOE/LLRW-170, "Economics of a Small-Volume Low-Level Radioactive Waste Disposal Facility", April 1993.
27. Tri-State Motor Transit Co., Joplin, Missouri.
28. Cost Guide, Cost Estimating Methods and Techniques, DOE/MA-0063 Vol. 6, May 1982.
29. ORNL/NTRC-006, Rev 0, "Transportation Routing Analysis Geographic Information System (TRAGIS) User's Manual," June 2003.

APPENDIX A
LIST OF SYSTEMS AND STRUCTURES

Kewaunee System and Structure List

Unit 1

Type	System Name or Description
ESS	Air Conditioning Cooling Water
ESS	Chlorination System
ESS	Component Cooling
ESS	Electrical
ESS	Fire Protection
ESS	Heating System
ESS	Hot Water Heating System
ESS	HVAC
ESS	Make Up Water
ESS	Misc. Vents, Drains & Sump Pump Piping
ESS	Potable Water
ESS	Radioactive Waste Solidification System
ESS	Reactor Coolant
ESS	Reactor Plant Misc. Vents, Drains & Sump
ESS	Residual Heat Removal
ESS	Safety Injection
ESS	Secondary Sampling Systems
ESS	Service Water
ESS	Service Water Pre-Treatment System
ESS	Service Water System Containment Cooling
ESS	Station and Instrument Air System
ESS	Turbine & Auxiliary Bldg. Traps and Drains
ESS	Waste Disposal
NON	Air Removal
NON	Aux. Feedwater
NON	Bleed Steam and Heater Vents
NON	Chemical Injection
NON	Chemical Injection System
NON	Chemical Volume Control
NON	Circulating Water System
NON	Condensate and Gland Seal Systems
NON	Containment Spray
NON	Containment Vessel Pressurization System
NON	Diesel Generator Start-up Air
NON	Feedwater
NON	Fuel Oil Exhaust and Cooling Water Piping
NON	Fuel Oil Systems
NON	Heater and Moisture Separator Drains
NON	Hydrogen-Oxygen Gas Analyzer
NON	Internal Containment Spray System
NON	Main Steam
NON	Make Up Water
NON	Miscellaneous Gas Systems
NON	Office/Warehouse Annex Steam, Condensate System
NON	Reactor Coolant
NON	Residual Heat Removal
NON	Secondary Sampling Systems

Kewaunee System and Structure List

Unit 1

Type	System Name or Description
NON	Spent Fuel Pool Cooling and Clean-up System
NON	Steam Generator Blowdown
NON	Steam Generator Blowdown System
NON	Turbine Oil Purification
NON	Vent System Post Loca Hydrogen Control
NON	Waste Gas
NON	Waste Neutralizing Tank Discharge Treatment
STRUC	Administration Building
STRUC	Administrative Training Bldg.
STRUC	Auxiliary Building
STRUC	Circulating Water & Discharge Piping
STRUC	Containment Building
STRUC	Control House
STRUC	Decontamination Building
STRUC	Discharge Structure
STRUC	Fuel Handling Building
STRUC	Gate House
STRUC	Maintenance Vehicle Garage
STRUC	Maintenance Waste Oil Material Storage Building
STRUC	Material Storage Building
STRUC	Meteorological Tower
STRUC	New Cable Storage Building
STRUC	Nine Stall Vehicle Garage
STRUC	Office-Warehouse Annex
STRUC	Pump House 1
STRUC	Pump House 2
STRUC	Screenhouse
STRUC	Service Water Pre-Treatment Basin
STRUC	Sewage Treatment Plant
STRUC	Simulator Building
STRUC	Steam Generator Storage Facility
STRUC	Technical Support Center
STRUC	Transformer Area
STRUC	Turbine Building
STRUC	Warehouse #1

APPENDIX B
SPENT FUEL SHIPPING SCHEDULES

Kewaunee Power Station
Scenarios 1 and 5 - Spent Fuel Shipping Schedule, Existing License and Repository Open in 2012

Year	On-Site Transfers			On-Site Inventory			Off-Site Transfers		
	Fuel Assemblies Discharged	No Dry Modules	Assemblies Transferred from Pool to Dry Storage	Assemblies in Fuel Pool Storage	Assemblies in Dry Storage	Total Assemblies in On Site Storage	Total Assemblies to DOE	Assemblies Shipped to DOE From Pool	Assemblies Shipped to DOE from Dry Storage
2006	48	0	0	1040	0	1040	0	0	0
2007	0	0	0	1040	0	1040	0	0	0
2008	48	6	192	896	192	1088	0	0	0
2009	48	0	0	944	192	1136	0	0	0
2010	0	3	96	848	288	1136	0	0	0
2011	48	0	0	896	288	1184	0	0	0
2012	48	0	0	944	288	1232	0	0	0
2013	121	0	0	1065	288	1353	0	0	0
2014	0	2	64	945	352	1297	56	56	0
2015	0	2	64	840	416	1256	41	41	0
2016	32	3	96	689	512	1201	87	87	0
2017	0	3	96	527	608	1135	66	66	0
2018	0	3	96	300	704	1004	131	131	0
2019	0	3	96	143	800	943	61	61	0
2020	0	3	96	0	896	896	47	47	0
2021	0	0	0	0	832	832	64	0	64
2022	0	0	0	0	768	768	64	0	64
2023	0	0	0	0	736	736	32	0	32
2024	0	0	0	0	672	672	64	0	64
2025	0	0	0	0	608	608	64	0	64
2026	0	0	0	0	608	608	0	0	0
2027	0	0	0	0	576	576	32	0	32
2028	0	0	0	0	544	544	32	0	32
2029	0	0	0	0	512	512	32	0	32
2030	0	0	0	0	480	480	32	0	32
2031	0	0	0	0	416	416	64	0	64
2032	0	0	0	0	384	384	32	0	32
2033	0	0	0	0	352	352	32	0	32
2034	0	0	0	0	288	288	64	0	64
2035	0	0	0	0	256	256	32	0	32
2036	0	0	0	0	224	224	32	0	32
2037	0	0	0	0	192	192	32	0	32
2038	0	0	0	0	160	160	32	0	32
2039	0	0	0	0	96	96	64	0	64
2040	0	0	0	0	64	64	32	0	32
2041	0	0	0	0	32	32	32	0	32
2042	0	0	0	0	0	0	32	0	32

Total Number MPCs	28
No. Post S/D MPCs for fuel assemblies	19
No. Post S/D MPCs for GTCC	1
Number MPCs Required During Operation	9

Kewaunee Power Station
Scenario 2 - Spent Fuel Shipping Schedule, Existing License and Repository Open in 2017

Year	On-Site Transfers			On-Site Inventory			Off-Site Transfers		
	Fuel Assemblies Discharged	No Dry Modules	Assemblies Transferred from Pool to Dry Storage	Assemblies in Fuel Pool Storage	Assemblies in Dry Storage	Total Assemblies in On Site Storage	Total Assemblies to DOE	Assemblies Shipped to DOE From Pool	Assemblies Shipped to DOE from Dry Storage
2006	48	0	0	1040	0	1040	0	0	0
2007	0	0	0	1040	0	1040	0	0	0
2008	48	6	192	896	192	1088	0	0	0
2009	48	0	0	944	192	1136	0	0	0
2010	0	3	96	848	288	1136	0	0	0
2011	48	0	0	896	288	1184	0	0	0
2012	48	0	0	944	288	1232	0	0	0
2013	121	0	0	1065	288	1353	0	0	0
2014	0	4	128	937	416	1353	0	0	0
2015	0	4	128	809	544	1353	0	0	0
2016	32	5	160	681	704	1385	0	0	0
2017	0	4	128	553	832	1385	0	0	0
2018	0	4	128	425	960	1385	0	0	0
2019	0	5	160	209	1120	1329	56	56	0
2020	0	5	160	0	1280	1280	49	49	0
2021	0	0	0	0	1216	1216	64	0	64
2022	0	0	0	0	1152	1152	64	0	64
2023	0	0	0	0	1024	1024	128	0	128
2024	0	0	0	0	960	960	64	0	64
2025	0	0	0	0	896	896	64	0	64
2026	0	0	0	0	832	832	64	0	64
2027	0	0	0	0	800	800	32	0	32
2028	0	0	0	0	736	736	64	0	64
2029	0	0	0	0	672	672	64	0	64
2030	0	0	0	0	608	608	64	0	64
2031	0	0	0	0	608	608	0	0	0
2032	0	0	0	0	576	576	32	0	32
2033	0	0	0	0	544	544	32	0	32
2034	0	0	0	0	480	480	64	0	64
2035	0	0	0	0	448	448	32	0	32
2036	0	0	0	0	416	416	32	0	32
2037	0	0	0	0	384	384	32	0	32
2038	0	0	0	0	352	352	32	0	32
2039	0	0	0	0	288	288	64	0	64
2040	0	0	0	0	256	256	32	0	32
2041	0	0	0	0	224	224	32	0	32
2042	0	0	0	0	192	192	32	0	32
2043	0	0	0	0	128	128	64	0	64
2044	0	0	0	0	96	96	32	0	32
2045	0	0	0	0	64	64	32	0	32
2046	0	0	0	0	32	32	32	0	32
2047	0	0	0	0	0	0	32	0	32
2048	0	0	0	0	0	0	0	0	0

Total Number MPCs	40
No. Post S/D MPCs for fuel assemblies	31
No. Post S/D MPCs for GTCC	1
Number MPCs Required During Operation	9

Kewaunee Power Station
Scenario 3 - Spent Fuel Shipping Schedule, License Extension and Repository Open in 2012

Year	On-Site Transfers			On-Site Inventory			Off-Site Transfers		
	Fuel Assemblies Discharged	No Dry Modules	Assemblies Transferred from Pool to Dry Storage	Assemblies in Fuel Pool Storage	Assemblies in Dry Storage	Total Assemblies in On Site Storage	Total Assemblies to DOE	Assemblies Shipped to DOE From Pool	Assemblies Shipped to DOE from Dry Storage
2006	48	0	0	1040	0	1040	0	0	0
2007	0	0	0	1040	0	1040	0	0	0
2008	48	6	192	896	192	1088	0	0	0
2009	48	0	0	944	192	1136	0	0	0
2010	0	3	96	848	288	1136	0	0	0
2011	48	0	0	896	288	1184	0	0	0
2012	48	0	0	944	288	1232	0	0	0
2013	0	0	0	944	288	1232	0	0	0
2014	48	0	0	936	288	1224	56	56	0
2015	48	0	0	943	288	1231	41	41	0
2016	0	0	0	856	288	1144	87	87	0
2017	48	0	0	838	288	1126	66	66	0
2018	48	0	0	755	288	1043	131	131	0
2019	0	0	0	694	288	982	61	61	0
2020	48	0	0	697	288	985	45	45	0
2021	48	0	0	675	288	963	70	70	0
2022	0	0	0	630	288	918	45	45	0
2023	48	0	0	633	288	921	45	45	0
2024	48	0	0	595	288	883	86	86	0
2025	0	0	0	550	288	838	45	45	0
2026	48	0	0	598	288	886	0	0	0
2027	48	0	0	601	288	889	45	45	0
2028	0	0	0	560	288	848	41	41	0
2029	48	0	0	568	288	856	40	40	0
2030	48	0	0	577	288	865	39	39	0
2031	0	0	0	538	288	826	39	39	0
2032	48	0	0	547	288	835	39	39	0
2033	121	0	0	629	288	917	39	39	0
2034	0	0	0	590	288	878	39	39	0
2035	0	1	32	519	320	839	39	39	0
2036	32	3	96	416	416	832	39	39	0
2037	0	2	64	313	480	793	39	39	0
2038	0	2	64	210	544	754	39	39	0
2039	0	2	64	107	608	715	39	39	0
2040	0	2	64	0	672	672	43	43	0
2041	0	0	0	0	640	640	32	0	32
2042	0	0	0	0	608	608	32	0	32
2043	0	0	0	0	576	576	32	0	32
2044	0	0	0	0	544	544	32	0	32
2045	0	0	0	0	512	512	32	0	32
2046	0	0	0	0	448	448	64	0	64
2047	0	0	0	0	416	416	32	0	32
2048	0	0	0	0	384	384	32	0	32
2049	0	0	0	0	352	352	32	0	32
2050	0	0	0	0	288	288	64	0	64
2051	0	0	0	0	256	256	32	0	32
2052	0	0	0	0	224	224	32	0	32
2053	0	0	0	0	192	192	32	0	32
2054	0	0	0	0	128	128	64	0	64
2055	0	0	0	0	96	96	32	0	32
2056	0	0	0	0	64	64	32	0	32
2057	0	0	0	0	32	32	32	0	32
2058	0	0	0	0	0	0	32	0	32

Total Number MPCs	21
No. Post S/D MPCs for fuel assemblies	12
No. Post S/D MPCs for GTCC	1
Number MPCs Required During Operation	9

Kewaunee Power Station
Scenario 4 - Spent Fuel Shipping Schedule, License Extension and Repository Open in 2017

Year	On-Site Transfers			On-Site Inventory			Off-Site Transfers		
	Fuel Assemblies Discharged	No Dry Modules	Assemblies Transferred from Pool to Dry Storage	Assemblies in Fuel Pool Storage	Assemblies in Dry Storage	Total Assemblies in On Site Storage	Total Assemblies to DOE	Assemblies Shipped to DOE From Pool	Assemblies Shipped to DOE from Dry Storage
2006	48	0	0	1040	0	1040	0	0	0
2007	0	0	0	1040	0	1040	0	0	0
2008	48	6	192	896	192	1088	0	0	0
2009	48	0	0	944	192	1136	0	0	0
2010	0	3	96	848	288	1136	0	0	0
2011	48	0	0	896	288	1184	0	0	0
2012	48	0	0	944	288	1232	0	0	0
2013	0	0	0	944	288	1232	0	0	0
2014	48	3	96	896	384	1280	0	0	0
2015	48	0	0	944	384	1328	0	0	0
2016	0	0	0	944	384	1328	0	0	0
2017	48	0	0	992	384	1376	0	0	0
2018	48	0	0	1040	384	1424	0	0	0
2019	0	0	0	984	384	1368	56	56	0
2020	48	0	0	991	384	1375	41	41	0
2021	48	0	0	952	384	1336	87	87	0
2022	0	0	0	886	384	1270	66	66	0
2023	48	0	0	803	384	1187	131	131	0
2024	48	0	0	790	384	1174	61	61	0
2025	0	0	0	745	384	1129	45	45	0
2026	48	0	0	723	384	1107	70	70	0
2027	48	0	0	726	384	1110	45	45	0
2028	0	0	0	681	384	1065	45	45	0
2029	48	0	0	643	384	1027	86	86	0
2030	48	0	0	646	384	1030	45	45	0
2031	0	0	0	646	384	1030	0	0	0
2032	48	0	0	649	384	1033	45	45	0
2033	121	0	0	729	384	1113	41	41	0
2034	0	2	64	625	448	1073	40	40	0
2035	0	2	64	522	512	1034	39	39	0
2036	32	3	96	419	608	1027	39	39	0
2037	0	2	64	316	672	988	39	39	0
2038	0	2	64	213	736	949	39	39	0
2039	0	2	64	110	800	910	39	39	0
2040	0	2	64	0	864	864	46	46	0
2041	0	0	0	0	832	832	32	0	32
2042	0	0	0	0	800	800	32	0	32
2043	0	0	0	0	768	768	32	0	32
2044	0	0	0	0	736	736	32	0	32
2045	0	0	0	0	672	672	64	0	64
2046	0	0	0	0	640	640	32	0	32
2047	0	0	0	0	608	608	32	0	32
2048	0	0	0	0	576	576	32	0	32
2049	0	0	0	0	544	544	32	0	32
2050	0	0	0	0	480	480	64	0	64
2051	0	0	0	0	448	448	32	0	32
2052	0	0	0	0	416	416	32	0	32
2053	0	0	0	0	384	384	32	0	32
2054	0	0	0	0	352	352	32	0	32
2055	0	0	0	0	288	288	64	0	64
2056	0	0	0	0	256	256	32	0	32
2057	0	0	0	0	224	224	32	0	32
2058	0	0	0	0	192	192	32	0	32
2059	0	0	0	0	160	160	32	0	32
2060	0	0	0	0	96	96	64	0	64
2061	0	0	0	0	64	64	32	0	32
2062	0	0	0	0	32	32	32	0	32
2063	0	0	0	0	0	0	32	0	32
2064	0	0	0	0	0	0	0	0	0

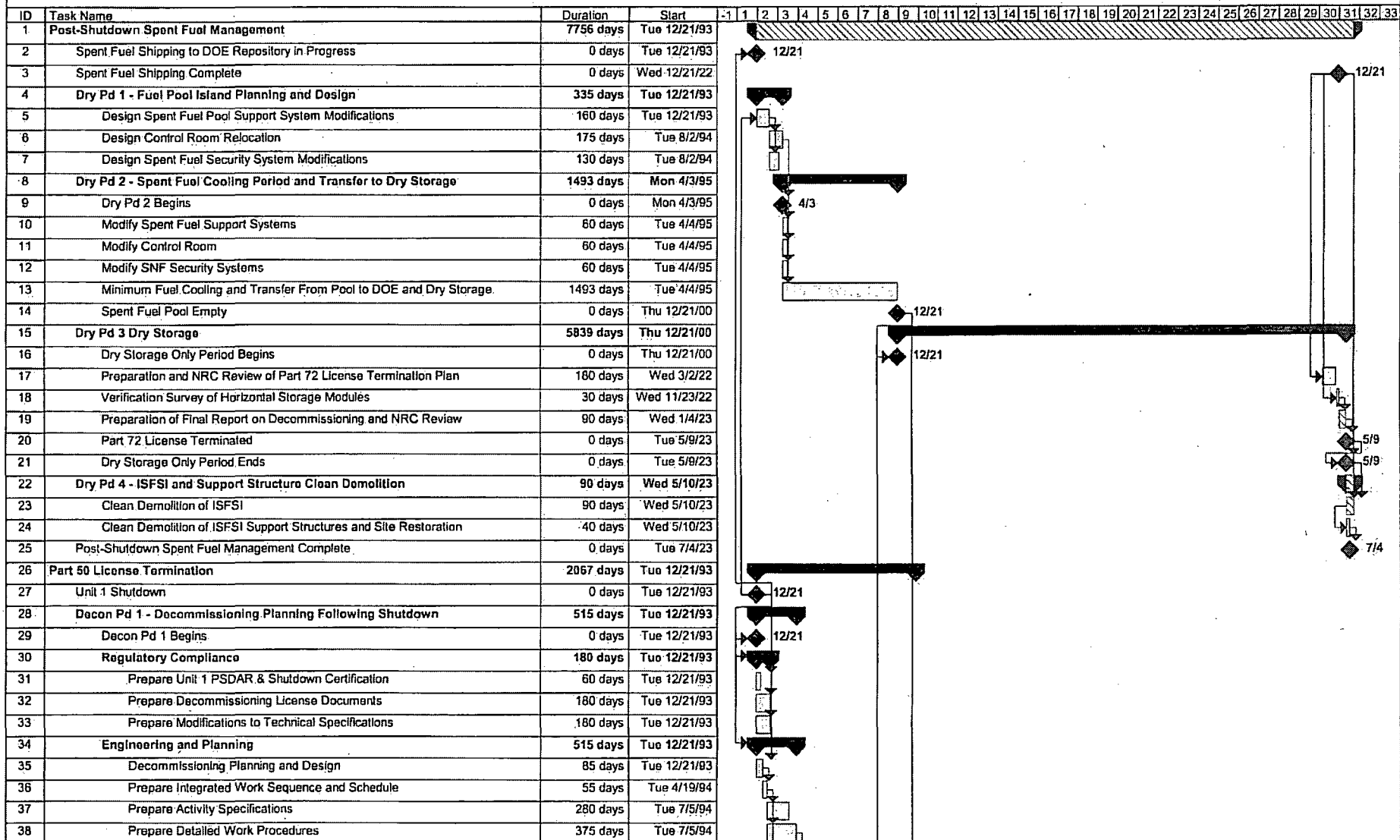
Total Number MPCs	27
No. Post S/D MPCs for fuel assemblies	15
No. Post S/D MPCs for GTCC	1
Number MPCs Required During Operation	12

APPENDIX C

DETAILED PROJECT SCHEDULES

Scenario 1 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2012

NOTE: ADD 20 YEARS TO ALL DATES



Scenario I - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2012

NOTE: ADD 20 YEARS TO ALL DATES

ID	Task Name	Duration	Start
39	Design Containment Access Modifications	65 days	Tue 7/5/94
40	Develop Site Repowering Plan and Procedures	180 days	Tue 7/5/94
41	Develop Approach for Primary System Decontamination	135 days	Tue 7/5/94
42	Develop Site Characterization and Final Status Survey Procedures	130 days	Tue 7/5/94
43	Procure Nonengineered Standard Equipment	90 days	Tue 1/10/95
44	Design and procure special equipment and materials	90 days	Tue 1/10/95
45	Test Special Equipment	90 days	Tue 5/16/95
46	Decon Pd 1 Ends	0 days	Mon 12/11/95
47	Decon Pd 2 - Post-Shutdown Modifications and Preparation	135 days	Mon 12/11/95
48	Decon Pd 2 Begins	0 days	Mon 12/11/95
49	Construct new change rooms, hot laundry, in-plant laydown areas	90 days	Tue 12/12/95
50	Perform Baseline Radiation Survey	80 days	Tue 12/12/95
51	Primary System Decon	60 days	Tue 12/12/95
52	Flush and Drain Non-Essential Systems	20 days	Tue 3/5/96
53	Asbestos Abatement	45 days	Tue 4/2/96
54	Implement cold & dark	90 days	Tue 12/12/95
55	Modify Containment Access	90 days	Tue 12/12/95
56	Vessel and Internals Removal Preparation	45 days	Tue 4/16/96
57	Decon Pd 2 Ends	0 days	Mon 6/17/96
58	Decon Pd 3 Major Component Removal	406 days	Mon 6/17/96
59	Decon Pd 3 Begins	0 days	Mon 6/17/96
60	Remove Non-Essential Systems	100 days	Tue 6/18/96
61	Remove Reactor Vessel and Internals	226 days	Tue 6/18/96
62	Upper/Lower Internals Cutting Preparation	15 days	Tue 6/18/96
63	Upper Internals Segmentation	20 days	Tue 7/9/96
64	Lower Internals Segmentation	75 days	Tue 8/6/96
65	Lower Internals Removal and Packaging	10 days	Tue 11/19/96
66	Vessel/Closure Head Removal Preparation	15 days	Tue 12/3/96
67	Vessel and Closure Head One-Piece Removal	70 days	Tue 12/24/96
68	Cutting Securement	21 days	Tue 4/1/97
69	Remove Essential Systems	135 days	Wed 4/30/97
70	Prepare License Termination Plan	26 wks	Tue 6/18/96
71	Public Hearing on LTP	4 wks	Tue 1/28/97
72	License Termination Plan Approval	12 wks	Wed 4/30/97
73	Remove Steam Generators & Pressurizer	36 wks	Wed 4/30/97
74	Decon Pd 3 Ends	0 days	Tue 1/6/98
75	Decon Pd 4a Building Decontamination	125 days	Tue 1/6/98
76	Decon Pd 4a Begins	0 days	Tue 1/6/98

Scenario 1 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2012

NOTE: ADD 20 YEARS TO ALL DATES

ID	Task Name	Duration	Start
77	Decon Containment Building	80 days	Wed 1/7/98
78	Decon Auxiliary Building	25 days	Wed 4/29/98
79	Decon Technical Support Center	15 days	Wed 6/3/98
80	Decon Decontamination Building	5 days	Wed 6/24/98
81	Decon Pd 4a Ends	0 days	Tue 6/30/98
82	Decon Pd 4b Optimization Delay	.646 days	Tue 6/30/98
83	Decon Pd 4b Begins	0 days	Tue 6/30/98
84	Decon Pd 4b Ends	0 days	Thu 12/21/00
85	Decon Pd 4c Fuel Building Decontamination	240 days	Thu 12/21/00
86	Decon Pd 4c Begins	0 days	Thu 12/21/00
87	Remove Spent Fuel Pool Racks and Drain Fuel Pool	8 wks	Thu 12/21/00
88	Decon Fuel Handling Building	40 days	Thu 2/15/01
89	Remediate Soil Contamination	30 days	Thu 4/12/01
90	Perform Final Status Survey	120 days	Thu 12/21/00
91	ORISE Verification and NRC Approval	6 mons	Thu 6/7/01
92	Decon Pd 4c Ends	0 days	Wed 11/21/01
93	Decon Complete - License terminated	0 days	Wed 11/21/01
94	Grn Pd 1 Clean Building Demolition	300 days	Wed 11/21/01
95	Grn Pd 1 Begins	0 days	Wed 11/21/01
96	Demolish Containment Building	110 days	Thu 11/22/01
97	Demolish Turbine Building	60 days	Thu 4/25/02
98	Demolish Fuel Handling Building	45 days	Thu 7/18/02
99	Demolish Auxiliary Building	85 days	Thu 9/19/02
100	Demolish Non-Essential Structures Not Required For ISFSI Support	160 days	Thu 11/22/01
101	Grn Pd 1 Ends	0 days	Wed 1/15/03
102	Grn Pd 2 Site Restoration	40 days	Wed 1/15/03
103	Grn Pd 2 Begins	0 days	Wed 1/15/03
104	Perform Final Site Grading	6 wks	Thu 1/16/03
105	Perform Final Site Stabilization	2 wks	Thu 2/27/03
106	Grn Pd 2 Ends	0 days	Wed-3/12/03
107	Site Restored	0 days	Wed 3/12/03

DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2017

NOTE: ADD 20 YEARS TO ALL DATES

ID	Task Name	Duration	Start
1	Post-Shutdown Spent Fuel Management	9060 days	Tue 12/21/93
2	Spent Fuel Shipping to DOE Repository in Progress	0 days	Tue 12/21/93
3	Spent Fuel Shipping Complete	0 days	Tue 12/21/27
4	Dry Pd 1 - Fuel Pool Island Planning and Design	335 days	Tue 12/21/93
5	Design Spent Fuel Pool Support System Modifications	160 days	Tue 12/21/93
6	Design Control Room Relocation	175 days	Tue 8/2/94
7	Design Spent Fuel Security System Modifications	130 days	Tue 8/2/94
8	Dry Pd 2 - Spent Fuel Cooling Period and Transfer to Dry Storage	1493 days	Mon 4/3/95
9	Dry Pd 2 Begins	0 days	Mon 4/3/95
10	Modify Spent Fuel Support Systems	60 days	Tue 4/4/95
11	Modify Control Room	60 days	Tue 4/4/95
12	Modify SNF Security Systems	60 days	Tue 4/4/95
13	Minimum Fuel Cooling and Transfer From Pool to DOE and Dry Storage	1493 days	Tue 4/4/95
14	Spent Fuel Pool Empty	0 days	Thu 12/21/00
15	Dry Pd 3 Dry Storage	7143 days	Thu 12/21/00
16	Dry Storage Only Period Begins	0 days	Thu 12/21/00
17	Preparation and NRC Review of Part 72 License Termination Plan	180 days	Tue 3/2/27
18	Verification Survey of Horizontal Storage Modules	30 days	Tue 11/23/27
19	Preparation of Final Report on Decommissioning and NRC Review	90 days	Tue 1/4/28
20	Part 72 License Terminated	0 days	Mon 5/8/28
21	Dry Storage Only Period Ends	0 days	Mon 5/8/28
22	Dry Pd 4 - ISFSI and Support Structure Clean Demolition	90 days	Tue 5/9/28
23	Clean Demolition of ISFSI	90 days	Tue 5/9/28
24	Clean Demolition of ISFSI Support Structures and Site Restoration	40 days	Tue 5/9/28
25	Post-Shutdown Spent Fuel Management Complete	0 days	Mon 7/3/28
26	Part 50 License Termination	2067 days	Tue 12/21/93
27	Unit 1 Shutdown	0 days	Tue 12/21/93
28	Decon Pd 1 - Decommissioning Planning Following Shutdown	515 days	Tue 12/21/93
29	Decon Pd 1 Begins	0 days	Tue 12/21/93
30	Regulatory Compliance	180 days	Tue 12/21/93
31	Prepare Unit 1 PSDAR & Shutdown Certification	60 days	Tue 12/21/93
32	Prepare Decommissioning License Documents	180 days	Tue 12/21/93
33	Prepare Modifications to Technical Specifications	180 days	Tue 12/21/93
34	Engineering and Planning	515 days	Tue 12/21/93
35	Decommissioning Planning and Design	85 days	Tue 12/21/93
36	Prepare Integrated Work Sequence and Schedule	55 days	Tue 4/19/94
37	Prepare Activity Specifications	280 days	Tue 7/5/94
38	Prepare Detailed Work Procedures	375 days	Tue 7/5/94
39	Design Containment Access Modifications	85 days	Tue 7/5/94
40	Develop Site Repowering Plan and Procedures	180 days	Tue 7/5/94
41	Develop Approach for Primary System Decontamination	135 days	Tue 7/5/94
42	Develop Site Characterization and Final Status Survey Procedures	130 days	Tue 7/5/94

DECON with Dry Storage, Fuel Pool Island, 2013 Shutdown and Repository Open in 2017

NOTE: ADD 20 YEARS TO ALL DATES

ID	Task Name	Duration	Start
43	Procure Nonengineered Standard Equipment	90 days	Tue 1/10/95
44	Design and procure special equipment and materials	90 days	Tue 1/10/95
45	Test Special Equipment	90 days	Tue 5/16/95
46	Decon Pd 1 Ends	0 days	Mon 12/11/95
47	Decon Pd 2 - Post-Shutdown Modifications and Preparation	135 days	Mon 12/11/95
48	Decon Pd 2 Begins	0 days	Mon 12/11/95
49	Construct new change rooms, hot laundry, in-plant laydown areas	90 days	Tue 12/12/95
50	Perform Baseline Radiation Survey	90 days	Tue 12/12/95
51	Primary System Decon	60 days	Tue 12/12/95
52	Flush and Drain Non-Essential Systems	20 days	Tue 3/5/96
53	Asbestos Abatement	45 days	Tue 4/2/96
54	Implement cold & dark	90 days	Tue 12/12/95
55	Modify Containment Access	90 days	Tue 12/12/95
56	Vessel and Internals Removal Preparation	45 days	Tue 4/16/96
57	Decon Pd 2 Ends	0 days	Mon 6/17/96
58	Decon Pd 3 Major Component Removal	406 days	Mon 6/17/96
59	Decon Pd 3 Begins	0 days	Mon 6/17/96
60	Remove Non-Essential Systems	100 days	Tue 6/18/96
61	Remove Reactor Vessel and Internals	226 days	Tue 6/18/96
62	Upper/Lower Internals Cutting Preparation	15 days	Tue 6/18/96
63	Upper Internals Segmentation	20 days	Tue 7/9/96
64	Lower Internals Segmentation	75 days	Tue 8/6/96
65	Lower Internals Removal and Packaging	10 days	Tue 11/19/96
66	Vessel/Closure Head Removal Preparation	15 days	Tue 12/3/96
67	Vessel and Closure Head One-Piece Removal	70 days	Tue 12/24/96
68	Cutting Securement	21 days	Tue 4/1/97
69	Remove Essential Systems	135 days	Wed 4/30/97
70	Prepare License Termination Plan	26 wks	Tue 6/18/96
71	Public Hearing on LTP	4 wks	Tue 1/28/97
72	License Termination Plan Approval	12 wks	Wed 4/30/97
73	Remove Steam Generators & Pressurizer	36 wks	Wed 4/30/97
74	Decon Pd 3 Ends	0 days	Tue 1/6/98
75	Decon Pd 4a Building Decontamination	125 days	Tue 1/6/98
76	Decon Pd 4a Begins	0 days	Tue 1/6/98
77	Decon Containment Building	80 days	Wed 1/7/98
78	Decon Auxiliary Building	25 days	Wed 4/29/98
79	Decon Technical Support Center	15 days	Wed 6/3/98
80	Decon Decontamination Building	5 days	Wed 6/24/98
81	Decon Pd 4a Ends	0 days	Tue 6/30/98
82	Decon Pd 4b Optimization Delay	646 days	Tue 6/30/98
83	Decon Pd 4b Begins	0 days	Tue 6/30/98
84	Decon Pd 4b Ends	0 days	Thu 12/21/00

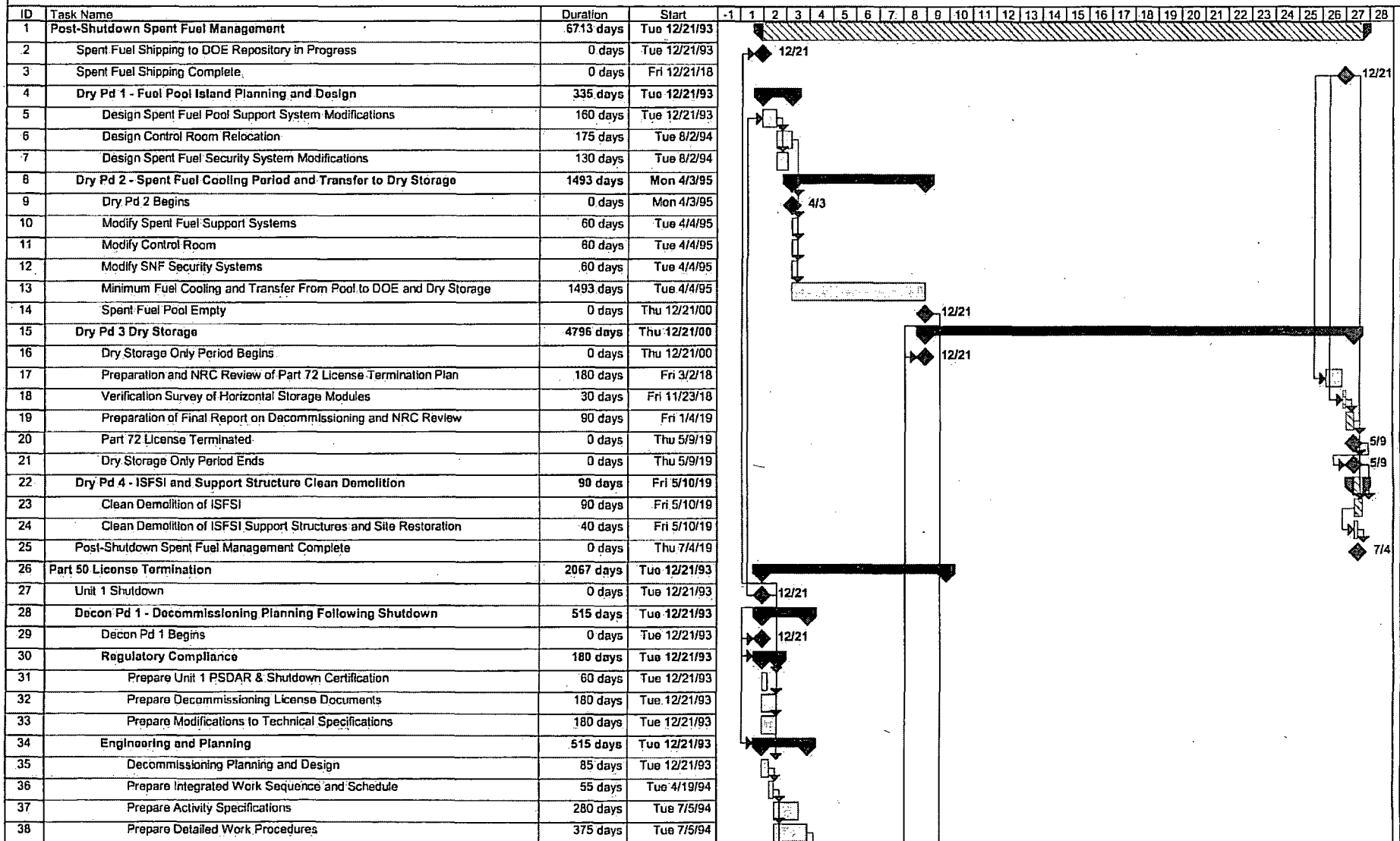
Scenario 2 - Detailed Schedule Kewaunee Power Station

NOTE: ADD 20 YEARS TO ALL DATES

ID	Task Name	Duration	Start
85	Decon Pd 4c Fuel Building Decontamination	240 days	Thu 12/21/00
86	Decon Pd 4c Begins	0 days	Thu 12/21/00
87	Remove Spent Fuel Pool Racks and Drain Fuel Pool	8 wks	Thu 12/21/00
88	Decon Fuel Handling Building	40 days	Thu 2/15/01
89	Remediate Soil Contamination	30 days	Thu 4/12/01
90	Perform Final Status Survey	120 days	Thu 12/21/00
91	ORISE Verification and NRC Approval	6 mons	Thu 6/7/01
92	Decon Pd 4c Ends	0 days	Wed 11/21/01
93	Decon Complete - License terminated	0 days	Wed 11/21/01
94	Gm Pd 1 Clean Building Demolition	300 days	Wed 11/21/01
95	Gm Pd 1 Begins	0 days	Wed 11/21/01
96	Demolish Containment Building	110 days	Thu 11/22/01
97	Demolish Turbine Building	60 days	Thu 4/25/02
98	Demolish Fuel Handling Building	45 days	Thu 7/18/02
99	Demolish Auxiliary Building	85 days	Thu 9/19/02
100	Demolish Non-Essential Structures Not Required For ISFSI Support	160 days	Thu 11/22/01
101	Gm Pd 1 Ends	0 days	Wed 1/15/03
102	Gm Pd 2 Site Restoration	40 days	Wed 1/15/03
103	Gm Pd 2 Begins	0 days	Wed 1/15/03
104	Perform Final Site Grading	6 wks	Thu 1/16/03
105	Perform Final Site Stabilization	2 wks	Thu 2/27/03
106	Gm Pd 2 Ends	0 days	Wed 3/12/03
107	Site Restored	0 days	Wed 3/12/03

Scenario 3 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2012

NOTE: ADD 40 YEARS TO ALL DATES



Scenario 3 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2012

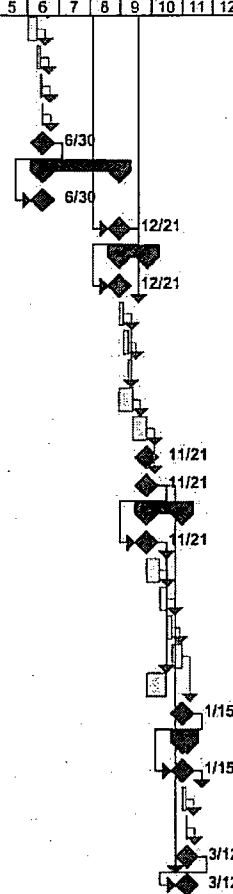
NOTE: ADD 40 YEARS TO ALL DATES

ID	Task Name	Duration	Start
39	Design Containment Access Modifications	65 days	Tue 7/5/94
40	Develop Site Repowering Plan and Procedures	180 days	Tue 7/5/94
41	Develop Approach for Primary System Decontamination	135 days	Tue 7/5/94
42	Develop Site Characterization and Final Status Survey Procedures	130 days	Tue 7/5/94
43	Procure Nonengineered Standard Equipment	90 days	Tue 1/10/95
44	Design and procure special equipment and materials	90 days	Tue 1/10/95
45	Test Special Equipment	90 days	Tue 5/16/95
46	Decon Pd 1 Ends	0 days	Mon 12/11/95
47	Decon Pd 2 - Post-Shutdown Modifications and Preparation	135 days	Mon 12/11/95
48	Decon Pd 2 Begins	0 days	Mon 12/11/95
49	Construct new change rooms, hot laundry, in-plant laydown areas	90 days	Tue 12/12/95
50	Perform Baseline Radiation Survey	90 days	Tue 12/12/95
51	Primary System Decon	60 days	Tue 12/12/95
52	Flush and Drain Non-Essential Systems	20 days	Tue 3/5/96
53	Asbestos Abatement	45 days	Tue 4/2/96
54	Implement cold & dark	90 days	Tue 12/12/95
55	Modify Containment Access	90 days	Tue 12/12/95
56	Vessel and Internals Removal Preparation	45 days	Tue 4/16/96
57	Decon Pd 2 Ends	0 days	Mon 6/17/96
58	Decon Pd 3 Major Component Removal	406 days	Mon 6/17/96
59	Decon Pd 3 Begins	0 days	Mon 6/17/96
60	Remove Non-Essential Systems	100 days	Tue 6/18/96
61	Remove Reactor Vessel and Internals	226 days	Tue 6/18/96
62	Upper/Lower Internals Cutting Preparation	15 days	Tue 6/18/96
63	Upper Internals Segmentation	20 days	Tue 7/9/96
64	Lower Internals Segmentation	75 days	Tue 8/6/96
65	Lower Internals Removal and Packaging	10 days	Tue 11/19/96
66	Vessel/Closure Head Removal Preparation	15 days	Tue 12/3/96
67	Vessel and Closure Head One-Piece Removal	70 days	Tue 12/24/96
68	Cutting Securement	21 days	Tue 4/1/97
69	Remove Essential Systems	135 days	Wed 4/30/97
70	Prepare License Termination Plan	26 wks	Tue 6/18/96
71	Public Hearing on LTP	4 wks	Tue 1/28/97
72	License Termination Plan Approval	12 wks	Wed 4/30/97
73	Remove Steam Generators & Pressurizer	36 wks	Wed 4/30/97
74	Decon Pd 3 Ends	0 days	Tue 1/6/98
75	Decon Pd 4a Building Decontamination	125 days	Tue 1/6/98
76	Decon Pd 4a Begins	0 days	Tue 1/6/98

Scenario 3 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2012

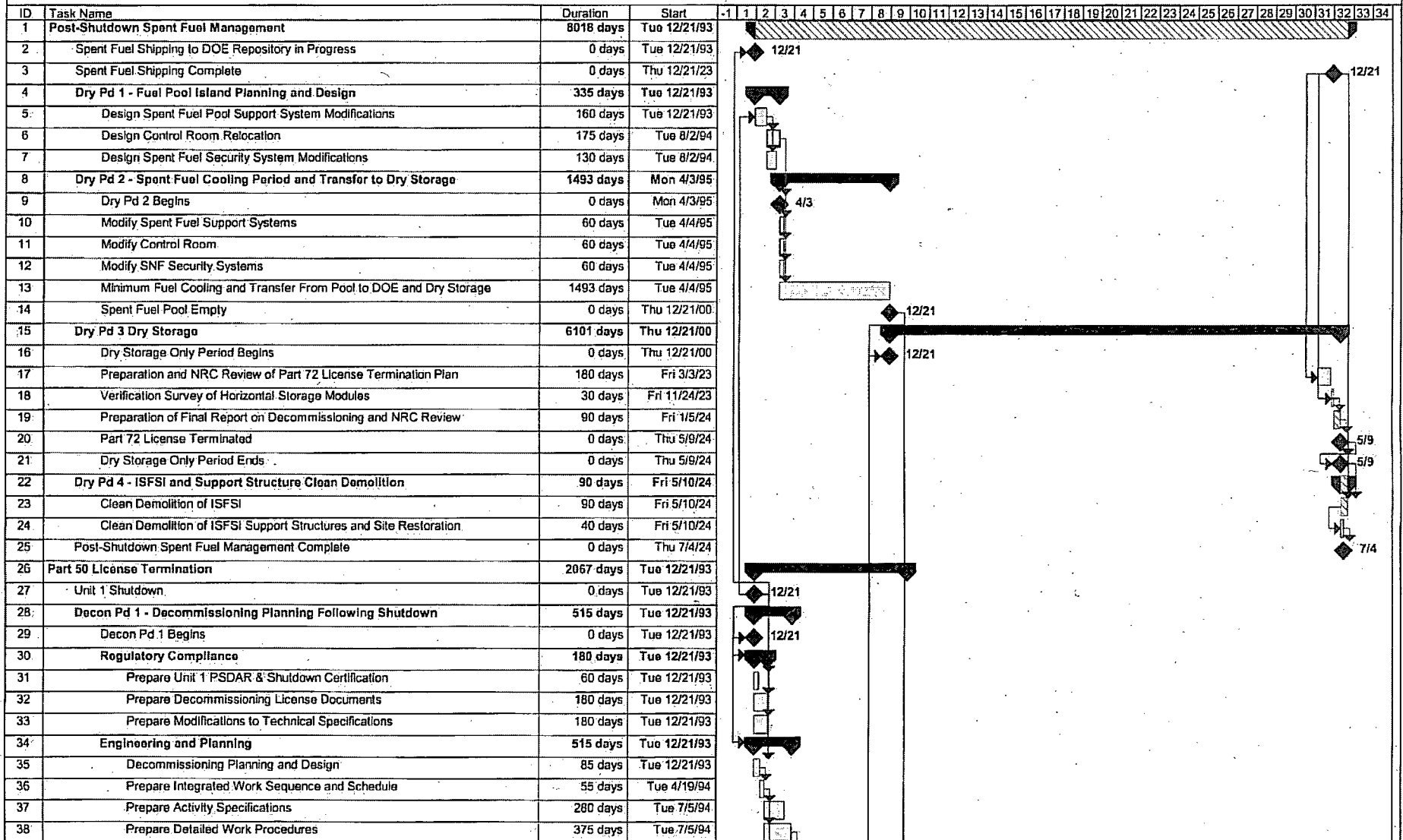
NOTE: ADD 40 YEARS TO ALL DATES

ID	Task Name	Duration	Start	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
77	Decon Containment Building	80 days	Wed 1/7/98																													
78	Decon Auxiliary Building	25 days	Wed 4/29/98																													
79	Decon Technical Support Center	15 days	Wed 6/3/98																													
80	Decon Decontamination Building	5 days	Wed 6/24/98																													
81	Decon Pd 4a Ends	0 days	Tue 6/30/98																													
82	Decon Pd 4b Optimization Delay	646 days	Tue 6/30/98																													
83	Decon Pd 4b Begins	0 days	Tue 6/30/98																													
84	Decon Pd 4b Ends	0 days	Thu 12/21/00																													
85	Decon Pd 4c Fuel Building Decontamination	240 days	Thu 12/21/00																													
86	Decon Pd 4c Begins	0 days	Thu 12/21/00																													
87	Remove Spent Fuel Pool Racks and Drain Fuel Pool	8 wks	Thu 12/21/00																													
88	Decon Fuel Handling Building	40 days	Thu 2/15/01																													
89	Remediate Soil Contamination	30 days	Thu 4/12/01																													
90	Perform Final Status Survey	120 days	Thu 12/21/00																													
91	ORISE Verification and NRC Approval	6 mons	Thu 6/7/01																													
92	Decon Pd 4c Ends	0 days	Wed 11/21/01																													
93	Decon Complete - License terminated	0 days	Wed 11/21/01																													
94	Grn Pd 1 Clean Building Demolition	300 days	Wed 11/21/01																													
95	Grn Pd 1 Begins	0 days	Wed 11/21/01																													
96	Demolish Containment Building	110 days	Thu 11/22/01																													
97	Demolish Turbine Building	60 days	Thu 4/25/02																													
98	Demolish Fuel Handling Building	45 days	Thu 7/18/02																													
99	Demolish Auxiliary Building	85 days	Thu 9/19/02																													
100	Demolish Non-Essential Structures Not Required For ISFSI Support	160 days	Thu 11/22/01																													
101	Grn Pd 1 Ends	0 days	Wed 1/15/03																													
102	Grn Pd 2 Site Restoration	40 days	Wed 1/15/03																													
103	Grn Pd 2 Begins	0 days	Wed 1/15/03																													
104	Perform Final Site Grading	6 wks	Thu 1/16/03																													
105	Perform Final Site Stabilization	2 wks	Thu 2/27/03																													
106	Grn Pd 2 Ends	0 days	Wed 3/12/03																													
107	Site Restored	0 days	Wed 3/12/03																													



Scenario 4 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2017

NOTE: ADD 40 YEARS TO ALL DATES



Scenario 4 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2017

NOTE: ADD 40 YEARS TO ALL DATES

ID	Task Name	Duration	Start
39	Design Containment Access Modifications	65 days	Tue 7/5/94
40	Develop Site Repowering Plan and Procedures	180 days	Tue 7/5/94
41	Develop Approach for Primary System Decontamination	135 days	Tue 7/5/94
42	Develop Site Characterization and Final Status Survey Procedures	130 days	Tue 7/5/94
43	Procure Nonengineered Standard Equipment	90 days	Tue 1/10/95
44	Design and procure special equipment and materials	90 days	Tue 1/10/95
45	Test Special Equipment	90 days	Tue 5/16/95
46	Decon Pd 1 Ends	0 days	Mon 12/11/95
47	Decon Pd 2 - Post-Shutdown Modifications and Preparation	135 days	Mon 12/11/95
48	Decon Pd 2 Begins	0 days	Mon 12/11/95
49	Construct new change rooms; hot laundry; in-plant laydown areas	90 days	Tue 12/12/95
50	Perform Baseline Radiation Survey	90 days	Tue 12/12/95
51	Primary System Decon	60 days	Tue 12/12/95
52	Flush and Drain Non-Essential Systems	20 days	Tue 3/5/96
53	Asbestos Abatement	45 days	Tue 4/2/96
54	Implement cold & dark	90 days	Tue 12/12/95
55	Modify Containment Access	90 days	Tue 12/12/95
56	Vessel and Internals Removal Preparation	45 days	Tue 4/16/96
57	Decon Pd 2 Ends	0 days	Mon 6/17/96
58	Decon Pd 3 Major Component Removal	406 days	Mon 6/17/96
59	Decon Pd 3 Begins	0 days	Mon 6/17/96
60	Remove Non-Essential Systems	100 days	Tue 6/18/96
61	Remove Reactor Vessel and Internals	226 days	Tue 6/18/96
62	Upper/Lower Internals Cutting Preparation	15 days	Tue 6/18/96
63	Upper Internals Segmentation	20 days	Tue 7/9/96
64	Lower Internals Segmentation	75 days	Tue 8/6/96
65	Lower Internals Removal and Packaging	10 days	Tue 11/19/96
66	Vessel/Closure Head Removal Preparation	15 days	Tue 12/3/96
67	Vessel and Closure Head One-Piece Removal	70 days	Tue 12/24/96
68	Cutting Securement	21 days	Tue 4/1/97
69	Remove Essential Systems	135 days	Wed 4/30/97
70	Prepare License Termination Plan	28 wks	Tue 6/18/96
71	Public Hearing on LTP	4 wks	Tue 1/28/97
72	License Termination Plan Approval	12 wks	Wed 4/30/97
73	Remove Steam Generators & Pressurizer	36 wks	Wed 4/30/97
74	Decon Pd 3 Ends	0 days	Tue 1/6/98
75	Decon Pd 4a Building Decontamination	125 days	Tue 1/6/98
76	Decon Pd 4a Begins	0 days	Tue 1/6/98

Scenario 4 - Detailed Schedule
Kewaunee Power Station
DECON with Dry Storage, Fuel Pool Island, 2033 Shutdown and Repository Open in 2017

NOTE: ADD 40 YEARS TO ALL DATES

ID	Task Name	Duration	Start
77	Decon Containment Building	80 days	Wed 1/7/98
78	Decon Auxiliary Building	25 days	Wed 4/29/98
79	Decon Technical Support Center	15 days	Wed 6/3/98
80	Decon Decontamination Building	5 days	Wed 6/24/98
81	Decon Pd 4a Ends	0 days	Tue 6/30/98
82	Decon Pd 4b Optimization Delay	646 days	Tue 6/30/98
83	Decon Pd 4b Begins	0 days	Tue 6/30/98
84	Decon Pd 4b Ends	0 days	Thu 12/21/00
85	Decon Pd 4c Fuel Building Decontamination	240 days	Thu 12/21/00
86	Decon Pd 4c Begins	0 days	Thu 12/21/00
87	Remove Spent Fuel Pool Racks and Drain Fuel Pool	8 wks	Thu 12/21/00
88	Decon Fuel Handling Building	40 days	Thu 2/15/01
89	Remediate Soil Contamination	30 days	Thu 4/12/01
90	Perform Final Status Survey	120 days	Thu 12/21/00
91	ORISE Verification and NRC Approval	6 mons	Thu 6/7/01
92	Decon Pd 4c Ends	0 days	Wed 11/21/01
93	Decon Complete - License terminated	0 days	Wed 11/21/01
94	Grn Pd 1 Clean Building Demolition	300 days	Wed 11/21/01
95	Grn Pd 1 Begins	0 days	Wed 11/21/01
96	Demolish Containment Building	110 days	Thu 11/22/01
97	Demolish Turbine Building	80 days	Thu 4/25/02
98	Demolish Fuel Handling Building	45 days	Thu 7/18/02
99	Demolish Auxiliary Building	85 days	Thu 9/19/02
100	Demolish Non-Essential Structures Not Required For ISFSI Support	160 days	Thu 11/22/01
101	Grn Pd 1 Ends	0 days	Wed 1/15/03
102	Grn Pd 2 Site Restoration	40 days	Wed 1/15/03
103	Grn Pd 2 Begins	0 days	Wed 1/15/03
104	Perform Final Site Grading	6 wks	Thu 1/16/03
105	Perform Final Site Stabilization	2 wks	Thu 2/27/03
106	Grn Pd 2 Ends	0 days	Wed 3/12/03
107	Site Restored	0 days	Wed 3/12/03

APPENDIX D
DETAILED COST TABLES

Scenario - 1 **Kewaunee Power Station Detailed Cost Report**

Scenario Number 1		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination								
Decon Pd 1								
Distributed								
1.01	Planning and Design of Primary System Decontamination	\$181	\$1	\$0	\$0	\$182	\$24	\$206
1.03	Planning For Asbestos Removal	\$117	\$1	\$0	\$0	\$118	\$15	\$133
1.04	Planning and Design of Cold and Dark Site Repowering	\$516	\$5	\$0	\$0	\$521	\$68	\$589
1.05	Design Containment Access Modifications	\$199	\$3	\$0	\$0	\$202	\$26	\$228
1.06	Planning and Design of Site Characterization	\$282	\$2	\$0	\$0	\$284	\$37	\$321
1.07	Administrative activities	\$661	\$3	\$0	\$0	\$664	\$86	\$750
1.08	Preparation of Decommissioning Licensing Documents	\$1,441	\$5	\$0	\$0	\$1,446	\$188	\$1,634
1.09	Decommissioning Planning and Design	\$215	\$0	\$0	\$0	\$215	\$28	\$243
1.10	Prepare Integrated Work Sequence and Schedule	\$126	\$0	\$0	\$0	\$126	\$16	\$142
1.11	Prepare Activity Specifications	\$2,305	\$14	\$0	\$0	\$2,319	\$302	\$2,621
1.12	Prepare Detailed Work Procedures	\$2,085	\$5	\$0	\$0	\$2,090	\$272	\$2,362
1.13	Prepare License Termination Plan	\$285	\$7	\$0	\$0	\$292	\$38	\$330
1.14	Prepare Written Notification of Cessation of Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.15	Prepare Written Notification of Fuel Removal from Vessel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.01	Baseline Radiation Survey	\$409	\$80	\$0	\$0	\$489	\$64	\$553
Distributed	Subtotal	\$8,822	\$126	\$0	\$0	\$8,948	\$1,164	\$10,112
Undistributed								
2.01	Utility Staff	\$34,675	\$0	\$0	\$0	\$34,675	\$4,508	\$39,183
2.04	Insurance	\$0	\$0	\$0	\$793	\$793	\$119	\$912
2.05	Gross Receipts Taxes	\$0	\$0	\$0	\$5,810	\$5,810	\$872	\$6,682
2.06	Permits	\$0	\$0	\$0	\$944	\$944	\$142	\$1,086
2.07	Security Guard Force	\$1,329	\$0	\$0	\$0	\$1,329	\$199	\$1,528

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
2.08	Energy	\$0	\$0	\$0	\$1,686	\$1,686	\$253	\$1,939
2.10	HP Supplies	\$0	\$808	\$0	\$0	\$808	\$121	\$929
2.11	Supplies and Services	\$0	\$0	\$0	\$840	\$840	\$126	\$966
2.13	Severance	\$25,900	\$0	\$0	\$0	\$25,900	\$3,885	\$29,785
Undistributed	Subtotal	\$61,904	\$808	\$0	\$10,073	\$72,785	\$10,225	\$83,010
Decon Pd 1	Subtotal	\$70,726	\$934	\$0	\$10,073	\$81,733	\$11,389	\$93,122

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2								
Distributed								
2.02	Primary System Decon	\$917	\$285	\$1,280	\$0	\$2,482	\$323	\$2,805
2.03	Flush and Drain Non-Essential Systems	\$9	\$2	\$525	\$0	\$536	\$70	\$606
2.04	Modify Containment Access	\$300	\$450	\$0	\$0	\$750	\$98	\$848
2.05	Implement Cold and Dark	\$402	\$1,000	\$0	\$0	\$1,402	\$182	\$1,584
2.06	Asbestos Abatement of Pipe Insulation	\$10,703	\$818	\$526	\$0	\$12,047	\$2,771	\$14,818
2.07	Procure Non-Engineered Standard Equipment	\$0	\$2,487	\$0	\$0	\$2,487	\$323	\$2,810
2.08	Design, Specify, and Procure Special Items and Materials	\$754	\$4,571	\$0	\$0	\$5,325	\$692	\$6,017
2.09	Select Shipping Casks and Obtain Shipping Permits	\$27	\$27	\$0	\$0	\$54	\$7	\$61
2.10	Test Special Cutting and Handling Equipment and Train Operators	\$755	\$755	\$0	\$0	\$1,510	\$196	\$1,706
2.11	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	\$0	\$740	\$0	\$0	\$740	\$96	\$836
Distributed	Subtotal	\$13,867	\$11,135	\$2,331	\$0	\$27,333	\$4,758	\$32,091
Undistributed								
2.01	Utility Staff	\$9,102	\$0	\$0	\$0	\$9,102	\$1,183	\$10,285
2.04	Insurance	\$0	\$0	\$0	\$208	\$208	\$31	\$239
2.06	Permits	\$0	\$0	\$0	\$248	\$248	\$37	\$285
2.07	Security Guard Force	\$349	\$0	\$0	\$0	\$349	\$52	\$401
2.08	Energy	\$0	\$0	\$0	\$477	\$477	\$71	\$548
2.10	HP Supplies	\$0	\$212	\$0	\$0	\$212	\$32	\$244
2.11	Supplies and Services	\$0	\$0	\$0	\$1,794	\$1,794	\$269	\$2,063
Undistributed	Subtotal	\$9,451	\$212	\$0	\$2,727	\$12,390	\$1,675	\$14,065
Decon Pd 2	Subtotal	\$23,318	\$11,347	\$2,331	\$2,727	\$39,723	\$6,433	\$46,156

Scenario - 1 **Kewaunee Power Station Detailed Cost Report**

Scenario Number 1		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3								
Distributed								
2.12	Finalize Residual Radiation Inventory	\$60	\$6	\$0	\$0	\$66	\$8	\$74
3.01	Remove Control Rod Drive (CRD) and Reactor Cavity Missile Shields	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.02	Remove Vessel Head Insulation, CRD Mechanisms and Cables, Air Ducts and Vessel H	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.03	Reactor Vessel Insulation Removal and Disposal	\$22	\$8	\$118	\$0	\$148	\$42	\$190
3.04	Reactor Internals Removal and Disposal	\$1,516	\$827	\$11,357	\$0	\$13,700	\$3,788	\$17,488
3.05	Reactor Vessel Removal	\$976	\$1,302	\$5,324	\$0	\$7,602	\$2,118	\$9,720
3.06	Decontaminate and Remove NonEssential Systems	\$2,781	\$297	\$5,956	\$0	\$9,034	\$2,078	\$11,112
3.07	Remove, Decon, Ship and Bury Steam Generators	\$1,501	\$1,525	\$9,083	\$0	\$12,109	\$2,785	\$14,894
3.08	Remove, Ship and Bury Pressurizer	\$308	\$353	\$1,588	\$0	\$2,249	\$517	\$2,766
3.10	Decontaminate and Remove Essential Systems	\$4,025	\$1,025	\$2,351	\$0	\$7,401	\$1,702	\$9,103
Distributed	Subtotal	\$11,189	\$5,343	\$35,777	\$0	\$52,309	\$13,038	\$65,347
Undistributed								
2.01	Utility Staff	\$25,000	\$0	\$0	\$0	\$25,000	\$3,250	\$28,250
2.04	Insurance	\$0	\$0	\$0	\$626	\$626	\$94	\$720
2.06	Permits	\$0	\$0	\$0	\$910	\$910	\$137	\$1,047
2.07	Security Guard Force	\$1,049	\$0	\$0	\$0	\$1,049	\$157	\$1,206
2.08	Energy	\$0	\$0	\$0	\$1,330	\$1,330	\$199	\$1,529
2.10	HP Supplies	\$0	\$1,205	\$0	\$0	\$1,205	\$181	\$1,386
2.11	Supplies and Services	\$0	\$0	\$0	\$4,924	\$4,924	\$739	\$5,663
2.13	Severance	\$6,121	\$0	\$0	\$0	\$6,121	\$918	\$7,039
Undistributed	Subtotal	\$32,170	\$1,205	\$0	\$7,790	\$41,165	\$5,675	\$46,840
Decon Pd 3	Subtotal	\$43,359	\$6,548	\$35,777	\$7,790	\$93,474	\$18,713	\$112,187

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4a								
Distributed								
4.01	Decon Containment Building	\$1,294	\$742	\$8,266	\$0	\$10,302	\$2,370	\$12,672
4.07	Radiologically Contaminated Soil Remediation	\$27	\$336	\$5,642	\$0	\$6,005	\$1,381	\$7,386
4.11	Contaminated Roof Disposal	\$34	\$5	\$373	\$0	\$412	\$95	\$507
Distributed	Subtotal	\$1,355	\$1,083	\$14,281	\$0	\$16,719	\$3,846	\$20,565
Undistributed								
2.01	Utility Staff	\$5,725	\$0	\$0	\$0	\$5,725	\$744	\$6,469
2.04	Insurance	\$0	\$0	\$0	\$193	\$193	\$29	\$222
2.06	Permits	\$0	\$0	\$0	\$280	\$280	\$42	\$322
2.07	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.08	Energy	\$0	\$0	\$0	\$273	\$273	\$41	\$314
2.10	HP Supplies	\$0	\$350	\$0	\$0	\$350	\$53	\$403
2.11	Supplies and Services	\$0	\$0	\$0	\$1,149	\$1,149	\$172	\$1,321
2.13	Severance	\$4,456	\$0	\$0	\$0	\$4,456	\$668	\$5,124
Undistributed	Subtotal	\$10,504	\$350	\$0	\$1,895	\$12,749	\$1,797	\$14,546
Decon Pd 4a	Subtotal	\$11,859	\$1,433	\$14,281	\$1,895	\$29,468	\$5,643	\$35,111

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4b								
Undistributed								
2.01	Utility Staff	\$2,728	\$0	\$0	\$0	\$2,728	\$355	\$3,083
2.04	Insurance	\$0	\$0	\$0	\$997	\$997	\$150	\$1,147
2.06	Permits	\$0	\$0	\$0	\$922	\$922	\$138	\$1,060
2.07	Security Guard Force	\$836	\$0	\$0	\$0	\$836	\$125	\$961
2.08	Energy	\$0	\$0	\$0	\$168	\$168	\$25	\$193
2.10	HP Supplies	\$0	\$132	\$0	\$0	\$132	\$20	\$152
2.11	Supplies and Services	\$0	\$0	\$0	\$696	\$696	\$104	\$800
2.13	Severance	\$9,052	\$0	\$0	\$0	\$9,052	\$1,358	\$10,410
Undistributed	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806
Decon Pd 4b	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4c								
Distributed								
4.02	Decon Fuel Handling Building	\$652	\$501	\$721	\$0	\$1,874	\$431	\$2,305
4.03	Decon Auxiliary Building	\$95	\$145	\$221	\$0	\$461	\$106	\$567
4.04	Decon Technical Support Building	\$15	\$22	\$19	\$0	\$56	\$13	\$69
4.05	Decon Decontamination Building	\$6	\$3	\$19	\$0	\$28	\$7	\$35
4.06	Remove Spent Fuel Storage Racks	\$937	\$749	\$1,311	\$0	\$2,997	\$689	\$3,686
4.08	MARSSIM FSS for Structures	\$2,666	\$601	\$0	\$289	\$3,556	\$462	\$4,018
4.09	MARSSIM FSS for Land Areas	\$3,848	\$339	\$0	\$0	\$4,187	\$544	\$4,731
4.10	Prepare final report of dismantling program	\$60	\$1	\$0	\$0	\$61	\$8	\$69
Distributed	Subtotal	\$8,279	\$2,361	\$2,291	\$289	\$13,220	\$2,260	\$15,480
Undistributed								
2.01	Utility Staff	\$6,016	\$0	\$0	\$0	\$6,016	\$782	\$6,798
2.04	Insurance	\$0	\$0	\$0	\$369	\$369	\$55	\$424
2.06	Permits	\$0	\$0	\$0	\$439	\$439	\$66	\$505
2.07	Security Guard Force	\$619	\$0	\$0	\$0	\$619	\$93	\$712
2.08	Energy	\$0	\$0	\$0	\$183	\$183	\$27	\$210
2.10	HP Supplies	\$0	\$220	\$0	\$0	\$220	\$33	\$253
2.11	Supplies and Services	\$0	\$0	\$0	\$1,238	\$1,238	\$186	\$1,424
2.13	Severance	\$3,587	\$0	\$0	\$0	\$3,587	\$538	\$4,125
Undistributed	Subtotal	\$10,222	\$220	\$0	\$2,229	\$12,671	\$1,780	\$14,451
Decon Pd 4c	Subtotal	\$18,501	\$2,581	\$2,291	\$2,518	\$25,891	\$4,040	\$29,931

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination Subtotal		\$180,379	\$22,975	\$54,680	\$27,786	\$285,820	\$48,493	\$334,313
B. Spent Fuel								
Dry Pd 1								
Distributed								
1.01	Design Spent Fuel Support System Modifications	\$323	\$4	\$0	\$0	\$327	\$43	\$370
1.02	Design Control Room Relocation	\$309	\$4	\$0	\$0	\$313	\$41	\$354
1.03	Design Spent Fuel Storage Security Modifications	\$243	\$3	\$0	\$0	\$246	\$32	\$278
2.01	Install Spent Fuel Pool System Modifications	\$134	\$1,517	\$0	\$0	\$1,651	\$215	\$1,866
2.02	Implement Control Room Modifications	\$956	\$1,434	\$0	\$0	\$2,390	\$311	\$2,701
2.03	Implement Spent Fuel Pool Security Modifications	\$500	\$750	\$0	\$0	\$1,250	\$163	\$1,413
Distributed	Subtotal	\$2,465	\$3,712	\$0	\$0	\$6,177	\$805	\$6,982
Undistributed								
2.01	Utility Spent Fuel Staff	\$775	\$0	\$0	\$0	\$775	\$101	\$876
2.03	Fuel Pool Maintenance and Operation Staff	\$3,590	\$0	\$0	\$0	\$3,590	\$538	\$4,128
2.06	Insurance	\$0	\$0	\$0	\$1,008	\$1,008	\$151	\$1,159
2.07	Permits	\$0	\$0	\$0	\$1,943	\$1,943	\$291	\$2,234
2.08	Security Guard Force	\$3,601	\$0	\$0	\$0	\$3,601	\$540	\$4,141
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$256	\$256	\$38	\$294
2.10	Energy	\$0	\$0	\$0	\$367	\$367	\$55	\$422
2.11	Supplies and Services	\$0	\$0	\$0	\$3	\$3	\$0	\$3
2.12	HP Supplies	\$0	\$125	\$0	\$0	\$125	\$19	\$144
Undistributed	Subtotal	\$7,966	\$125	\$0	\$3,577	\$11,668	\$1,733	\$13,401
Dry Pd 1	Subtotal	\$10,431	\$3,837	\$0	\$3,577	\$17,845	\$2,538	\$20,383

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 2								
Distributed								
2.04	NRC Review and Approval of 10 CFR Part 72 License Application	\$0	\$0	\$0	\$410	\$410	\$53	\$463
2.05	Purchase of Dry Storage Modules for Fuel Assemblies	\$0	\$19,931	\$0	\$0	\$19,931	\$4,584	\$24,515
2.06	Purchase of Dry Storage Modules for GTCC Waste	\$0	\$1,049	\$0	\$0	\$1,049	\$241	\$1,290
Distributed	Subtotal	\$0	\$20,980	\$0	\$410	\$21,390	\$4,878	\$26,268
Undistributed								
2.01	Utility Spent Fuel Staff	\$3,458	\$0	\$0	\$0	\$3,458	\$450	\$3,908
2.03	Fuel Pool Maintenance and Operation Staff	\$16,024	\$0	\$0	\$0	\$16,024	\$2,404	\$18,428
2.06	Insurance	\$0	\$0	\$0	\$4,501	\$4,501	\$675	\$5,176
2.07	Permits	\$0	\$0	\$0	\$8,671	\$8,671	\$1,301	\$9,972
2.08	Security Guard Force	\$16,072	\$0	\$0	\$0	\$16,072	\$2,411	\$18,483
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,144	\$1,144	\$172	\$1,316
2.10	Energy	\$0	\$0	\$0	\$1,637	\$1,637	\$246	\$1,883
2.11	Supplies and Services	\$0	\$0	\$0	\$1,532	\$1,532	\$230	\$1,762
2.12	HP Supplies	\$0	\$560	\$0	\$0	\$560	\$84	\$644
Undistributed	Subtotal	\$35,554	\$560	\$0	\$17,485	\$53,599	\$7,973	\$61,572
Dry Pd 2	Subtotal	\$35,554	\$21,540	\$0	\$17,895	\$74,989	\$12,851	\$87,840

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1	License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified	
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 3								
Distributed								
3.01	NRC Review and Approval of 10 CFR Part 72 License Renewal	\$0	\$0	\$0	\$410	\$410	\$53	\$463
3.02	Preparation and NRC Review of License Termination Plan	\$55	\$0	\$0	\$96	\$151	\$27	\$178
3.03	Verification Survey of Horizontal Storage Modules	\$27	\$18	\$0	\$0	\$45	\$6	\$51
3.04	Preparation of Final Report on Decommissioning and NRC Review	\$55	\$0	\$0	\$96	\$151	\$20	\$171
Distributed	Subtotal	\$137	\$18	\$0	\$602	\$757	\$106	\$863
Undistributed								
2.01	Utility Spent Fuel Staff	\$31,795	\$0	\$0	\$0	\$31,795	\$4,133	\$35,928
2.04	Additional Staff for Spent Fuel Shipping	\$3,903	\$0	\$0	\$0	\$3,903	\$507	\$4,410
2.06	Insurance	\$0	\$0	\$0	\$13,809	\$13,809	\$2,071	\$15,880
2.07	Permits	\$0	\$0	\$0	\$11,563	\$11,563	\$1,734	\$13,297
2.08	Security Guard Force	\$31,445	\$0	\$0	\$0	\$31,445	\$4,717	\$36,162
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,678	\$1,678	\$252	\$1,930
2.10	Energy	\$0	\$0	\$0	\$2,703	\$2,703	\$405	\$3,108
2.11	Supplies and Services	\$0	\$0	\$0	\$2,886	\$2,886	\$433	\$3,319
2.12	HP Supplies	\$0	\$1,194	\$0	\$0	\$1,194	\$179	\$1,373
2.14	Severance	\$2,688	\$0	\$0	\$0	\$2,688	\$403	\$3,091
Undistributed	Subtotal	\$69,831	\$1,194	\$0	\$32,639	\$103,664	\$14,834	\$118,498
Dry Pd 3	Subtotal	\$69,968	\$1,212	\$0	\$33,241	\$104,421	\$14,940	\$119,361

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 4								
Distributed								
4.01	Demolition of ISFSI Support Structures	\$438	\$142	\$59	\$0	\$639	\$97	\$736
4.02	Clean Demolition of ISFSI	\$434	\$189	\$308	\$0	\$931	\$140	\$1,071
Distributed	Subtotal	\$872	\$331	\$367	\$0	\$1,570	\$237	\$1,807
Undistributed								
2.01	Utility Spent Fuel Staff	\$250	\$0	\$0	\$0	\$250	\$32	\$282
2.07	Permits	\$0	\$0	\$0	\$6	\$6	\$1	\$7
2.08	Security Guard Force	\$96	\$0	\$0	\$0	\$96	\$14	\$110
2.10	Energy	\$0	\$0	\$0	\$10	\$10	\$2	\$12
2.11	Supplies and Services	\$0	\$0	\$0	\$13	\$13	\$2	\$15
2.12	HP Supplies	\$0	\$12	\$0	\$0	\$12	\$2	\$14
2.14	Severance	\$1,613	\$0	\$0	\$0	\$1,613	\$242	\$1,855
Undistributed	Subtotal	\$1,959	\$12	\$0	\$29	\$2,000	\$295	\$2,295
Dry Pd 4	Subtotal	\$2,831	\$343	\$367	\$29	\$3,570	\$532	\$4,102

Scenario - 1 **Kewaunee Power Station Detailed Cost Report**

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
B. Spent Fuel	Subtotal	\$118,784	\$26,932	\$367	\$54,742	\$200,825	\$30,861	\$231,686
C. Greenfield								
Grn Pd 1								
Distributed								
1.01	Demolish Containment Building	\$1,608	\$346	\$177	\$0	\$2,131	\$312	\$2,443
1.02	Demolish Turbine Building	\$849	\$240	\$46	\$0	\$1,135	\$172	\$1,307
1.03	Demolish Auxiliary Building	\$778	\$256	\$136	\$0	\$1,170	\$178	\$1,348
1.04	Demolish Fuel Handling Building	\$374	\$131	\$68	\$0	\$573	\$88	\$661
1.05	Demolish Decontamination Building	\$18	\$5	\$1	\$0	\$24	\$4	\$28
1.06	Demolish Steam Generator Storage Building	\$31	\$9	\$2	\$0	\$42	\$6	\$48
1.07	Demolish Non-Essential Structures	\$1,201	\$1,230	\$128	\$0	\$2,559	\$456	\$3,015
1.08	Clean Building Demolition Equipment	\$0	\$561	\$0	\$0	\$561	\$129	\$690
2.02	Remove temporary structures	\$25	\$21	\$0	\$0	\$46	\$8	\$54
Distributed	Subtotal	\$4,884	\$2,799	\$558	\$0	\$8,241	\$1,353	\$9,594
Undistributed								
2.01	Utility Staff	\$3,496	\$0	\$0	\$0	\$3,496	\$455	\$3,951
2.06	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.07	Energy	\$0	\$0	\$0	\$114	\$114	\$17	\$131
Undistributed	Subtotal	\$3,819	\$0	\$0	\$114	\$3,933	\$520	\$4,453
Grn Pd 1	Subtotal	\$8,703	\$2,799	\$558	\$114	\$12,174	\$1,873	\$14,047

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Grn Pd 2								
Distributed								
2.01	Site Restoration Equipment	\$0	\$37	\$0	\$0	\$37	\$8	\$45
2.03	Backfill and grade	\$303	\$221	\$0	\$0	\$524	\$90	\$614
Distributed	Subtotal	\$303	\$258	\$0	\$0	\$561	\$98	\$659
Undistributed								
2.01	Utility Staff	\$314	\$0	\$0	\$0	\$314	\$41	\$355
2.06	Security Guard Force	\$43	\$0	\$0	\$0	\$43	\$6	\$49
2.07	Energy	\$0	\$0	\$0	\$11	\$11	\$2	\$13
2.08	Severance	\$3,519	\$0	\$0	\$0	\$3,519	\$528	\$4,047
Undistributed	Subtotal	\$3,876	\$0	\$0	\$11	\$3,887	\$577	\$4,464
Grn Pd 2	Subtotal	\$4,179	\$258	\$0	\$11	\$4,448	\$675	\$5,123

Scenario - 1
Kewaunee Power Station Detailed Cost Report

Scenario Number 1

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status

Existing

Fuel Pool Systems

Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
C. Greenfield	Subtotal	\$12,882	\$3,057	\$558	\$125	\$16,622	\$2,548	\$19,170
Scenario No. 1	Total	\$312,045	\$52,964	\$55,605	\$82,653	\$503,267	\$81,902	\$585,169

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination								
Decon Pd 1								
Distributed								
1.01	Planning and Design of Primary System Decontamination	\$181	\$1	\$0	\$0	\$182	\$24	\$206
1.03	Planning For Asbestos Removal	\$117	\$1	\$0	\$0	\$118	\$15	\$133
1.04	Planning and Design of Cold and Dark Site Repowering	\$516	\$5	\$0	\$0	\$521	\$68	\$589
1.05	Design Containment Access Modifications	\$199	\$3	\$0	\$0	\$202	\$26	\$228
1.06	Planning and Design of Site Characterization	\$282	\$2	\$0	\$0	\$284	\$37	\$321
1.07	Administrative activities	\$661	\$3	\$0	\$0	\$664	\$86	\$750
1.08	Preparation of Decommissioning Licensing Documents	\$1,441	\$5	\$0	\$0	\$1,446	\$188	\$1,634
1.09	Decommissioning Planning and Design	\$215	\$0	\$0	\$0	\$215	\$28	\$243
1.10	Prepare Integrated Work Sequence and Schedule	\$126	\$0	\$0	\$0	\$126	\$16	\$142
1.11	Prepare Activity Specifications	\$2,305	\$14	\$0	\$0	\$2,319	\$302	\$2,621
1.12	Prepare Detailed Work Procedures	\$2,085	\$5	\$0	\$0	\$2,090	\$272	\$2,362
1.13	Prepare License Termination Plan	\$285	\$7	\$0	\$0	\$292	\$38	\$330
1.14	Prepare Written Notification of Cessation of Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.15	Prepare Written Notification of Fuel Removal from Vessel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.01	Baseline Radiation Survey	\$409	\$80	\$0	\$0	\$489	\$64	\$553
Distributed	Subtotal	\$8,822	\$126	\$0	\$0	\$8,948	\$1,164	\$10,112
Undistributed								
2.01	Utility Staff	\$34,675	\$0	\$0	\$0	\$34,675	\$4,508	\$39,183
2.04	Insurance	\$0	\$0	\$0	\$793	\$793	\$119	\$912
2.05	Gross Receipts Taxes	\$0	\$0	\$0	\$5,810	\$5,810	\$872	\$6,682
2.06	Permits	\$0	\$0	\$0	\$944	\$944	\$142	\$1,086
2.07	Security Guard Force	\$1,329	\$0	\$0	\$0	\$1,329	\$199	\$1,528

Scenario -2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
2.08	Energy	\$0	\$0	\$0	\$1,686	\$1,686	\$253	\$1,939
2.10	HP Supplies	\$0	\$808	\$0	\$0	\$808	\$121	\$929
2.11	Supplies and Services	\$0	\$0	\$0	\$840	\$840	\$126	\$966
2.13	Severance	\$25,900	\$0	\$0	\$0	\$25,900	\$3,885	\$29,785
Undistributed	Subtotal	\$61,904	\$808	\$0	\$10,073	\$72,785	\$10,225	\$83,010
Decon Pd 1	Subtotal	\$70,726	\$934	\$0	\$10,073	\$81,733	\$11,389	\$93,122

Scenario -2

Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2								
Distributed								
2.02	Primary System Decon	\$917	\$285	\$1,280	\$0	\$2,482	\$323	\$2,805
2.03	Flush and Drain Non-Essential Systems	\$9	\$2	\$525	\$0	\$536	\$70	\$606
2.04	Modify Containment Access	\$300	\$450	\$0	\$0	\$750	\$98	\$848
2.05	Implement Cold and Dark	\$402	\$1,000	\$0	\$0	\$1,402	\$182	\$1,584
2.06	Asbestos Abatement of Pipe Insulation	\$10,703	\$818	\$526	\$0	\$12,047	\$2,771	\$14,818
2.07	Procure Non-Engineered Standard Equipment	\$0	\$2,487	\$0	\$0	\$2,487	\$323	\$2,810
2.08	Design, Specify, and Procure Special Items and Materials	\$754	\$4,571	\$0	\$0	\$5,325	\$692	\$6,017
2.09	Select Shipping Casks and Obtain Shipping Permits	\$27	\$27	\$0	\$0	\$54	\$7	\$61
2.10	Test Special Cutting and Handling Equipment and Train Operators	\$755	\$755	\$0	\$0	\$1,510	\$196	\$1,706
2.11	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	\$0	\$740	\$0	\$0	\$740	\$96	\$836
Distributed	Subtotal	\$13,867	\$11,135	\$2,331	\$0	\$27,333	\$4,758	\$32,091
Undistributed								
2.01	Utility Staff	\$9,102	\$0	\$0	\$0	\$9,102	\$1,183	\$10,285
2.04	Insurance	\$0	\$0	\$0	\$208	\$208	\$31	\$239
2.06	Permits	\$0	\$0	\$0	\$248	\$248	\$37	\$285
2.07	Security Guard Force	\$349	\$0	\$0	\$0	\$349	\$52	\$401
2.08	Energy	\$0	\$0	\$0	\$477	\$477	\$71	\$548
2.10	HP Supplies	\$0	\$212	\$0	\$0	\$212	\$32	\$244
2.11	Supplies and Services	\$0	\$0	\$0	\$1,794	\$1,794	\$269	\$2,063
Undistributed	Subtotal	\$9,451	\$212	\$0	\$2,727	\$12,390	\$1,675	\$14,065
Decon Pd 2	Subtotal	\$23,318	\$11,347	\$2,331	\$2,727	\$39,723	\$6,433	\$46,156

Scenario -2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3								
Distributed								
2.12	Finalize Residual Radiation Inventory	\$60	\$6	\$0	\$0	\$66	\$8	\$74
3.01	Remove Control Rod Drive (CRD) and Reactor Cavity Missile Shields	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.02	Remove Vessel Head Insulation, CRD Mechanisms and Cables, Air Ducts and Vessel H	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.03	Reactor Vessel Insulation Removal and Disposal	\$22	\$8	\$118	\$0	\$148	\$42	\$190
3.04	Reactor Internals Removal and Disposal	\$1,516	\$827	\$11,357	\$0	\$13,700	\$3,788	\$17,488
3.05	Reactor Vessel Removal	\$976	\$1,302	\$5,324	\$0	\$7,602	\$2,118	\$9,720
3.06	Decontaminate and Remove NonEssential Systems	\$2,781	\$297	\$5,956	\$0	\$9,034	\$2,078	\$11,112
3.07	Remove, Decon, Ship and Bury Steam Generators	\$1,501	\$1,525	\$9,083	\$0	\$12,109	\$2,785	\$14,894
3.08	Remove, Ship and Bury Pressurizer	\$308	\$353	\$1,588	\$0	\$2,249	\$517	\$2,766
3.10	Decontaminate and Remove Essential Systems	\$4,025	\$1,025	\$2,351	\$0	\$7,401	\$1,702	\$9,103
Distributed	Subtotal	\$11,189	\$5,343	\$35,777	\$0	\$52,309	\$13,038	\$65,347
Undistributed								
2.01	Utility Staff	\$25,000	\$0	\$0	\$0	\$25,000	\$3,250	\$28,250
2.04	Insurance	\$0	\$0	\$0	\$626	\$626	\$94	\$720
2.06	Permits	\$0	\$0	\$0	\$910	\$910	\$137	\$1,047
2.07	Security Guard Force	\$1,049	\$0	\$0	\$0	\$1,049	\$157	\$1,206
2.08	Energy	\$0	\$0	\$0	\$1,330	\$1,330	\$199	\$1,529
2.10	HP Supplies	\$0	\$1,205	\$0	\$0	\$1,205	\$181	\$1,386
2.11	Supplies and Services	\$0	\$0	\$0	\$4,924	\$4,924	\$739	\$5,663
2.13	Severance	\$6,121	\$0	\$0	\$0	\$6,121	\$918	\$7,039
Undistributed	Subtotal	\$32,170	\$1,205	\$0	\$7,790	\$41,165	\$5,675	\$46,840
Decon Pd 3	Subtotal	\$43,359	\$6,548	\$35,777	\$7,790	\$93,474	\$18,713	\$112,187

Scenario -2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4a								
Distributed								
4.01	Decon Containment Building	\$1,294	\$742	\$8,266	\$0	\$10,302	\$2,370	\$12,672
4.07	Radiologically Contaminated Soil Remediation	\$27	\$336	\$5,642	\$0	\$6,005	\$1,381	\$7,386
4.11	Contaminated Roof Disposal	\$34	\$5	\$373	\$0	\$412	\$95	\$507
Distributed	Subtotal	\$1,355	\$1,083	\$14,281	\$0	\$16,719	\$3,846	\$20,565
Undistributed								
2.01	Utility Staff	\$5,725	\$0	\$0	\$0	\$5,725	\$744	\$6,469
2.04	Insurance	\$0	\$0	\$0	\$193	\$193	\$29	\$222
2.06	Permits	\$0	\$0	\$0	\$280	\$280	\$42	\$322
2.07	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.08	Energy	\$0	\$0	\$0	\$273	\$273	\$41	\$314
2.10	HP Supplies	\$0	\$350	\$0	\$0	\$350	\$53	\$403
2.11	Supplies and Services	\$0	\$0	\$0	\$1,149	\$1,149	\$172	\$1,321
2.13	Severance	\$4,456	\$0	\$0	\$0	\$4,456	\$668	\$5,124
Undistributed	Subtotal	\$10,504	\$350	\$0	\$1,895	\$12,749	\$1,797	\$14,546
Decon Pd 4a	Subtotal	\$11,859	\$1,433	\$14,281	\$1,895	\$29,468	\$5,643	\$35,111

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4b								
Undistributed								
2.01	Utility Staff	\$2,728	\$0	\$0	\$0	\$2,728	\$355	\$3,083
2.04	Insurance	\$0	\$0	\$0	\$997	\$997	\$150	\$1,147
2.06	Permits	\$0	\$0	\$0	\$922	\$922	\$138	\$1,060
2.07	Security Guard Force	\$836	\$0	\$0	\$0	\$836	\$125	\$961
2.08	Energy	\$0	\$0	\$0	\$168	\$168	\$25	\$193
2.10	HP Supplies	\$0	\$132	\$0	\$0	\$132	\$20	\$152
2.11	Supplies and Services	\$0	\$0	\$0	\$696	\$696	\$104	\$800
2.13	Severance	\$9,052	\$0	\$0	\$0	\$9,052	\$1,358	\$10,410
Undistributed	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806
Decon Pd 4b	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4c								
Distributed								
4.02	Decon Fuel Handling Building	\$652	\$501	\$721	\$0	\$1,874	\$431	\$2,305
4.03	Decon Auxiliary Building	\$95	\$145	\$221	\$0	\$461	\$106	\$567
4.04	Decon Technical Support Building	\$15	\$22	\$19	\$0	\$56	\$13	\$69
4.05	Decon Decontamination Building	\$6	\$3	\$19	\$0	\$28	\$7	\$35
4.06	Remove Spent Fuel Storage Racks	\$937	\$749	\$1,311	\$0	\$2,997	\$689	\$3,686
4.08	MARSSIM FSS for Structures	\$2,666	\$601	\$0	\$289	\$3,556	\$462	\$4,018
4.09	MARSSIM FSS for Land Areas	\$3,848	\$339	\$0	\$0	\$4,187	\$544	\$4,731
4.10	Prepare final report of dismantling program	\$60	\$1	\$0	\$0	\$61	\$8	\$69
Distributed	Subtotal	\$8,279	\$2,361	\$2,291	\$289	\$13,220	\$2,260	\$15,480
Undistributed								
2.01	Utility Staff	\$6,016	\$0	\$0	\$0	\$6,016	\$782	\$6,798
2.04	Insurance	\$0	\$0	\$0	\$369	\$369	\$55	\$424
2.06	Permits	\$0	\$0	\$0	\$439	\$439	\$66	\$505
2.07	Security Guard Force	\$619	\$0	\$0	\$0	\$619	\$93	\$712
2.08	Energy	\$0	\$0	\$0	\$183	\$183	\$27	\$210
2.10	HP Supplies	\$0	\$220	\$0	\$0	\$220	\$33	\$253
2.11	Supplies and Services	\$0	\$0	\$0	\$1,238	\$1,238	\$186	\$1,424
2.13	Severance	\$3,587	\$0	\$0	\$0	\$3,587	\$538	\$4,125
Undistributed	Subtotal	\$10,222	\$220	\$0	\$2,229	\$12,671	\$1,780	\$14,451
Decon Pd 4c	Subtotal	\$18,501	\$2,581	\$2,291	\$2,518	\$25,891	\$4,040	\$29,931

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2	License Status Existing	Unit 1 Shut Down Date 12/21/2013
Decommissioning Alternative Decon	Fuel Pool Systems Modified	
Spent Fuel Alternative Dry	Repository Opening Date 1/1/2017	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination Subtotal		\$180,379	\$22,975	\$54,680	\$27,786	\$285,820	\$48,493	\$334,313
B. Spent Fuel								
Dry Pd 1								
Distributed								
1.01	Design Spent Fuel Support System Modifications	\$323	\$4	\$0	\$0	\$327	\$43	\$370
1.02	Design Control Room Relocation	\$309	\$4	\$0	\$0	\$313	\$41	\$354
1.03	Design Spent Fuel Storage Security Modifications	\$243	\$3	\$0	\$0	\$246	\$32	\$278
2.01	Install Spent Fuel Pool System Modifications	\$134	\$1,517	\$0	\$0	\$1,651	\$215	\$1,866
2.02	Implement Control Room Modifications	\$956	\$1,434	\$0	\$0	\$2,390	\$311	\$2,701
2.03	Implement Spent Fuel Pool Security Modifications	\$500	\$750	\$0	\$0	\$1,250	\$163	\$1,413
Distributed	Subtotal	\$2,465	\$3,712	\$0	\$0	\$6,177	\$805	\$6,982
Undistributed								
2.01	Utility Spent Fuel Staff	\$775	\$0	\$0	\$0	\$775	\$101	\$876
2.03	Fuel Pool Maintenance and Operation Staff	\$3,590	\$0	\$0	\$0	\$3,590	\$538	\$4,128
2.06	Insurance	\$0	\$0	\$0	\$1,008	\$1,008	\$151	\$1,159
2.07	Permits	\$0	\$0	\$0	\$1,943	\$1,943	\$291	\$2,234
2.08	Security Guard Force	\$3,601	\$0	\$0	\$0	\$3,601	\$540	\$4,141
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$256	\$256	\$38	\$294
2.10	Energy	\$0	\$0	\$0	\$367	\$367	\$55	\$422
2.11	Supplies and Services	\$0	\$0	\$0	\$3	\$3	\$0	\$3
2.12	HP Supplies	\$0	\$125	\$0	\$0	\$125	\$19	\$144
Undistributed	Subtotal	\$7,966	\$125	\$0	\$3,577	\$11,668	\$1,733	\$13,401
Dry Pd 1	Subtotal	\$10,431	\$3,837	\$0	\$3,577	\$17,845	\$2,538	\$20,383

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 2								
Distributed								
2.04	NRC Review and Approval of 10 CFR Part 72 License Application	\$0	\$0	\$0	\$410	\$410	\$53	\$463
2.05	Purchase of Dry Storage Modules for Fuel Assemblies	\$0	\$32,520	\$0	\$0	\$32,520	\$7,479	\$39,999
2.06	Purchase of Dry Storage Modules for GTCC Waste	\$0	\$1,049	\$0	\$0	\$1,049	\$241	\$1,290
Distributed	Subtotal	\$0	\$33,569	\$0	\$410	\$33,979	\$7,773	\$41,752
Undistributed								
2.01	Utility Spent Fuel Staff	\$3,458	\$0	\$0	\$0	\$3,458	\$450	\$3,908
2.03	Fuel Pool Maintenance and Operation Staff	\$16,024	\$0	\$0	\$0	\$16,024	\$2,404	\$18,428
2.06	Insurance	\$0	\$0	\$0	\$4,501	\$4,501	\$675	\$5,176
2.07	Permits	\$0	\$0	\$0	\$8,671	\$8,671	\$1,301	\$9,972
2.08	Security Guard Force	\$16,072	\$0	\$0	\$0	\$16,072	\$2,411	\$18,483
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,144	\$1,144	\$172	\$1,316
2.10	Energy	\$0	\$0	\$0	\$1,637	\$1,637	\$246	\$1,883
2.11	Supplies and Services	\$0	\$0	\$0	\$1,532	\$1,532	\$230	\$1,762
2.12	HP Supplies	\$0	\$560	\$0	\$0	\$560	\$84	\$644
Undistributed	Subtotal	\$35,554	\$560	\$0	\$17,485	\$53,599	\$7,973	\$61,572
Dry Pd 2	Subtotal	\$35,554	\$34,129	\$0	\$17,895	\$87,578	\$15,746	\$103,324

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 3								
Distributed								
3.01	NRC Review and Approval of 10 CFR Part 72 License Renewal	\$0	\$0	\$0	\$410	\$410	\$53	\$463
3.02	Preparation and NRC Review of License Termination Plan	\$55	\$0	\$0	\$96	\$151	\$27	\$178
3.03	Verification Survey of Horizontal Storage Modules	\$38	\$21	\$0	\$0	\$59	\$8	\$67
3.04	Preparation of Final Report on Decommissioning and NRC Review	\$55	\$0	\$0	\$96	\$151	\$20	\$171
Distributed	Subtotal	\$148	\$21	\$0	\$602	\$771	\$108	\$879
Undistributed								
2.01	Utility Spent Fuel Staff	\$38,898	\$0	\$0	\$0	\$38,898	\$5,057	\$43,955
2.04	Additional Staff for Spent Fuel Shipping	\$4,775	\$0	\$0	\$0	\$4,775	\$621	\$5,396
2.06	Insurance	\$0	\$0	\$0	\$16,894	\$16,894	\$2,534	\$19,428
2.07	Permits	\$0	\$0	\$0	\$14,145	\$14,145	\$2,122	\$16,267
2.08	Security Guard Force	\$38,469	\$0	\$0	\$0	\$38,469	\$5,770	\$44,239
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$2,053	\$2,053	\$308	\$2,361
2.10	Energy	\$0	\$0	\$0	\$3,306	\$3,306	\$496	\$3,802
2.11	Supplies and Services	\$0	\$0	\$0	\$3,531	\$3,531	\$530	\$4,061
2.12	HP Supplies	\$0	\$1,460	\$0	\$0	\$1,460	\$219	\$1,679
2.14	Severance	\$2,688	\$0	\$0	\$0	\$2,688	\$403	\$3,091
Undistributed	Subtotal	\$84,830	\$1,460	\$0	\$39,929	\$126,219	\$18,060	\$144,279
Dry Pd 3	Subtotal	\$84,978	\$1,481	\$0	\$40,531	\$126,990	\$18,168	\$145,158

Scenario - 2

Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status

Existing

Fuel Pool Systems

Modified

Repository Opening Date 1/1/2017

Unit 1 Shut Down Date

12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 4								
Distributed								
4.01	Demolition of ISFSI Support Structures	\$438	\$142	\$59	\$0	\$639	\$97	\$736
4.02	Clean Demolition of ISFSI	\$598	\$254	\$440	\$0	\$1,292	\$193	\$1,485
Distributed	Subtotal	\$1,036	\$396	\$499	\$0	\$1,931	\$290	\$2,221
Undistributed								
2.01	Utility Spent Fuel Staff	\$252	\$0	\$0	\$0	\$252	\$33	\$285
2.07	Permits	\$0	\$0	\$0	\$6	\$6	\$1	\$7
2.08	Security Guard Force	\$97	\$0	\$0	\$0	\$97	\$15	\$112
2.10	Energy	\$0	\$0	\$0	\$10	\$10	\$2	\$12
2.11	Supplies and Services	\$0	\$0	\$0	\$13	\$13	\$2	\$15
2.12	HP Supplies	\$0	\$12	\$0	\$0	\$12	\$2	\$14
2.14	Severance	\$1,613	\$0	\$0	\$0	\$1,613	\$242	\$1,855
Undistributed	Subtotal	\$1,962	\$12	\$0	\$29	\$2,003	\$297	\$2,300
Dry Pd 4	Subtotal	\$2,998	\$408	\$499	\$29	\$3,934	\$587	\$4,521

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
B. Spent Fuel	Subtotal	\$133,961	\$39,855	\$499	\$62,032	\$236,347	\$37,039	\$273,386
C. Greenfield								
Grn Pd 1								
Distributed								
1.01	Demolish Containment Building	\$1,608	\$346	\$177	\$0	\$2,131	\$312	\$2,443
1.02	Demolish Turbine Building	\$849	\$240	\$46	\$0	\$1,135	\$172	\$1,307
1.03	Demolish Auxiliary Building	\$778	\$256	\$136	\$0	\$1,170	\$178	\$1,348
1.04	Demolish Fuel Handling Building	\$374	\$131	\$68	\$0	\$573	\$88	\$661
1.05	Demolish Decontamination Building	\$18	\$5	\$1	\$0	\$24	\$4	\$28
1.06	Demolish Steam Generator Storage Building	\$31	\$9	\$2	\$0	\$42	\$6	\$48
1.07	Demolish Non-Essential Structures	\$1,201	\$1,230	\$128	\$0	\$2,559	\$456	\$3,015
1.08	Clean Building Demolition Equipment	\$0	\$561	\$0	\$0	\$561	\$129	\$690
2.02	Remove temporary structures	\$25	\$21	\$0	\$0	\$46	\$8	\$54
Distributed	Subtotal	\$4,884	\$2,799	\$558	\$0	\$8,241	\$1,353	\$9,594
Undistributed								
2.01	Utility Staff	\$3,496	\$0	\$0	\$0	\$3,496	\$455	\$3,951
2.06	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.07	Energy	\$0	\$0	\$0	\$114	\$114	\$17	\$131
Undistributed	Subtotal	\$3,819	\$0	\$0	\$114	\$3,933	\$520	\$4,453
Grn Pd 1	Subtotal	\$8,703	\$2,799	\$558	\$114	\$12,174	\$1,873	\$14,047

Scenario -2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Existing

Fuel Pool Systems Modified

Repository Opening Date 1/1/2017

Unit 1 Shut Down Date

12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Grn Pd 2								
Distributed								
2.01	Site Restoration Equipment	\$0	\$37	\$0	\$0	\$37	\$8	\$45
2.03	Backfill and grade	\$303	\$221	\$0	\$0	\$524	\$90	\$614
Distributed	Subtotal	\$303	\$258	\$0	\$0	\$561	\$98	\$659
Undistributed								
2.01	Utility Staff	\$314	\$0	\$0	\$0	\$314	\$41	\$355
2.06	Security Guard Force	\$43	\$0	\$0	\$0	\$43	\$6	\$49
2.07	Energy	\$0	\$0	\$0	\$11	\$11	\$2	\$13
2.08	Severance	\$3,519	\$0	\$0	\$0	\$3,519	\$528	\$4,047
Undistributed	Subtotal	\$3,876	\$0	\$0	\$11	\$3,887	\$577	\$4,464
Grn Pd 2	Subtotal	\$4,179	\$258	\$0	\$11	\$4,448	\$675	\$5,123

Scenario - 2
Kewaunee Power Station Detailed Cost Report

Scenario Number 2	License Status Existing	Unit 1 Shut Down Date 12/21/2013
Decommissioning Alternative Decon	Fuel Pool Systems Modified	
Spent Fuel Alternative Dry	Repository Opening Date 1/1/2017	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
C. Greenfield	Subtotal	\$12,882	\$3,057	\$558	\$125	\$16,622	\$2,548	\$19,170
Scenario No. 2	Total	\$327,222	\$65,887	\$55,737	\$89,943	\$538,789	\$88,080	\$626,869

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination								
Decon Pd 1								
Distributed								
1.01	Planning and Design of Primary System Decontamination	\$181	\$1	\$0	\$0	\$182	\$24	\$206
1.03	Planning For Asbestos Removal	\$117	\$1	\$0	\$0	\$118	\$15	\$133
1.04	Planning and Design of Cold and Dark Site Repowering	\$516	\$5	\$0	\$0	\$521	\$68	\$589
1.05	Design Containment Access Modifications	\$199	\$3	\$0	\$0	\$202	\$26	\$228
1.06	Planning and Design of Site Characterization	\$282	\$2	\$0	\$0	\$284	\$37	\$321
1.07	Administrative activities	\$661	\$3	\$0	\$0	\$664	\$86	\$750
1.08	Preparation of Decommissioning Licensing Documents	\$1,441	\$5	\$0	\$0	\$1,446	\$188	\$1,634
1.09	Decommissioning Planning and Design	\$215	\$0	\$0	\$0	\$215	\$28	\$243
1.10	Prepare Integrated Work Sequence and Schedule	\$126	\$0	\$0	\$0	\$126	\$16	\$142
1.11	Prepare Activity Specifications	\$2,305	\$14	\$0	\$0	\$2,319	\$302	\$2,621
1.12	Prepare Detailed Work Procedures	\$2,085	\$5	\$0	\$0	\$2,090	\$272	\$2,362
1.13	Prepare License Termination Plan	\$285	\$7	\$0	\$0	\$292	\$38	\$330
1.14	Prepare Written Notification of Cessation of Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.15	Prepare Written Notification of Fuel Removal from Vessel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.01	Baseline Radiation Survey	\$409	\$80	\$0	\$0	\$489	\$64	\$553
Distributed	Subtotal	\$8,822	\$126	\$0	\$0	\$8,948	\$1,164	\$10,112
Undistributed								
2.01	Utility Staff	\$34,675	\$0	\$0	\$0	\$34,675	\$4,508	\$39,183
2.04	Insurance	\$0	\$0	\$0	\$793	\$793	\$119	\$912
2.05	Gross Receipts Taxes	\$0	\$0	\$0	\$5,810	\$5,810	\$872	\$6,682
2.06	Permits	\$0	\$0	\$0	\$944	\$944	\$142	\$1,086
2.07	Security Guard Force	\$1,329	\$0	\$0	\$0	\$1,329	\$199	\$1,528

Scenario - 3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Extended
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
2.08	Energy	\$0	\$0	\$0	\$1,686	\$1,686	\$253	\$1,939
2.10	HP Supplies	\$0	\$808	\$0	\$0	\$808	\$121	\$929
2.11	Supplies and Services	\$0	\$0	\$0	\$840	\$840	\$126	\$966
2.13	Severance	\$25,900	\$0	\$0	\$0	\$25,900	\$3,885	\$29,785
Undistributed	Subtotal	\$61,904	\$808	\$0	\$10,073	\$72,785	\$10,225	\$83,010
Decon Pd 1	Subtotal	\$70,726	\$934	\$0	\$10,073	\$81,733	\$11,389	\$93,122

Scenario -3

Kewaunee Power Station Detailed Cost Report

Scenario Number 3		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2								
Distributed								
2.02	Primary System Decon	\$917	\$285	\$1,280	\$0	\$2,482	\$323	\$2,805
2.03	Flush and Drain Non-Essential Systems	\$9	\$2	\$525	\$0	\$536	\$70	\$606
2.04	Modify Containment Access	\$300	\$450	\$0	\$0	\$750	\$98	\$848
2.05	Implement Cold and Dark	\$402	\$1,000	\$0	\$0	\$1,402	\$182	\$1,584
2.06	Asbestos Abatement of Pipe Insulation	\$10,703	\$818	\$526	\$0	\$12,047	\$2,771	\$14,818
2.07	Procure Non-Engineered Standard Equipment	\$0	\$2,487	\$0	\$0	\$2,487	\$323	\$2,810
2.08	Design, Specify, and Procure Special Items and Materials	\$754	\$4,571	\$0	\$0	\$5,325	\$692	\$6,017
2.09	Select Shipping Casks and Obtain Shipping Permits	\$27	\$27	\$0	\$0	\$54	\$7	\$61
2.10	Test Special Cutting and Handling Equipment and Train Operators	\$755	\$755	\$0	\$0	\$1,510	\$196	\$1,706
2.11	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	\$0	\$740	\$0	\$0	\$740	\$96	\$836
Distributed	Subtotal	\$13,867	\$11,135	\$2,331	\$0	\$27,333	\$4,758	\$32,091
Undistributed								
2.01	Utility Staff	\$9,102	\$0	\$0	\$0	\$9,102	\$1,183	\$10,285
2.04	Insurance	\$0	\$0	\$0	\$208	\$208	\$31	\$239
2.06	Permits	\$0	\$0	\$0	\$248	\$248	\$37	\$285
2.07	Security Guard Force	\$349	\$0	\$0	\$0	\$349	\$52	\$401
2.08	Energy	\$0	\$0	\$0	\$477	\$477	\$71	\$548
2.10	HP Supplies	\$0	\$212	\$0	\$0	\$212	\$32	\$244
2.11	Supplies and Services	\$0	\$0	\$0	\$1,794	\$1,794	\$269	\$2,063
Undistributed	Subtotal	\$9,451	\$212	\$0	\$2,727	\$12,390	\$1,675	\$14,065
Decon Pd 2	Subtotal	\$23,318	\$11,347	\$2,331	\$2,727	\$39,723	\$6,433	\$46,156

Scenario -3

Kewaunee Power Station Detailed Cost Report

Scenario Number 3		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3								
Distributed								
2.12	Finalize Residual Radiation Inventory	\$60	\$6	\$0	\$0	\$66	\$8	\$74
3.01	Remove Control Rod Drive (CRD) and Reactor Cavity Missile Shields	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.02	Remove Vessel Head Insulation, CRD Mechanisms and Cables, Air Ducts and Vessel H	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.03	Reactor Vessel Insulation Removal and Disposal	\$22	\$8	\$118	\$0	\$148	\$42	\$190
3.04	Reactor Internals Removal and Disposal	\$1,516	\$827	\$11,357	\$0	\$13,700	\$3,788	\$17,488
3.05	Reactor Vessel Removal	\$976	\$1,302	\$5,324	\$0	\$7,602	\$2,118	\$9,720
3.06	Decontaminate and Remove NonEssential Systems	\$2,781	\$297	\$5,956	\$0	\$9,034	\$2,078	\$11,112
3.07	Remove, Decon, Ship and Bury Steam Generators	\$1,501	\$1,525	\$9,083	\$0	\$12,109	\$2,785	\$14,894
3.08	Remove, Ship and Bury Pressurizer	\$308	\$353	\$1,588	\$0	\$2,249	\$517	\$2,766
3.10	Decontaminate and Remove Essential Systems	\$4,025	\$1,025	\$2,351	\$0	\$7,401	\$1,702	\$9,103
Distributed	Subtotal	\$11,189	\$5,343	\$35,777	\$0	\$52,309	\$13,038	\$65,347
Undistributed								
2.01	Utility Staff	\$25,000	\$0	\$0	\$0	\$25,000	\$3,250	\$28,250
2.04	Insurance	\$0	\$0	\$0	\$626	\$626	\$94	\$720
2.06	Permits	\$0	\$0	\$0	\$910	\$910	\$137	\$1,047
2.07	Security Guard Force	\$1,049	\$0	\$0	\$0	\$1,049	\$157	\$1,206
2.08	Energy	\$0	\$0	\$0	\$1,330	\$1,330	\$199	\$1,529
2.10	HP Supplies	\$0	\$1,205	\$0	\$0	\$1,205	\$181	\$1,386
2.11	Supplies and Services	\$0	\$0	\$0	\$4,924	\$4,924	\$739	\$5,663
2.13	Severance	\$6,121	\$0	\$0	\$0	\$6,121	\$918	\$7,039
Undistributed	Subtotal	\$32,170	\$1,205	\$0	\$7,790	\$41,165	\$5,675	\$46,840
Decon Pd 3	Subtotal	\$43,359	\$6,548	\$35,777	\$7,790	\$93,474	\$18,713	\$112,187

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3	License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified	
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4a								
Distributed								
4.01	Decon Containment Building	\$1,294	\$742	\$8,266	\$0	\$10,302	\$2,370	\$12,672
4.07	Radiologically Contaminated Soil Remediation	\$27	\$336	\$5,642	\$0	\$6,005	\$1,381	\$7,386
4.11	Contaminated Roof Disposal	\$34	\$5	\$373	\$0	\$412	\$95	\$507
Distributed	Subtotal	\$1,355	\$1,083	\$14,281	\$0	\$16,719	\$3,846	\$20,565
Undistributed								
2.01	Utility Staff	\$5,725	\$0	\$0	\$0	\$5,725	\$744	\$6,469
2.04	Insurance	\$0	\$0	\$0	\$193	\$193	\$29	\$222
2.06	Permits	\$0	\$0	\$0	\$280	\$280	\$42	\$322
2.07	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.08	Energy	\$0	\$0	\$0	\$273	\$273	\$41	\$314
2.10	HP Supplies	\$0	\$350	\$0	\$0	\$350	\$53	\$403
2.11	Supplies and Services	\$0	\$0	\$0	\$1,149	\$1,149	\$172	\$1,321
2.13	Severance	\$4,456	\$0	\$0	\$0	\$4,456	\$668	\$5,124
Undistributed	Subtotal	\$10,504	\$350	\$0	\$1,895	\$12,749	\$1,797	\$14,546
Decon Pd 4a	Subtotal	\$11,859	\$1,433	\$14,281	\$1,895	\$29,468	\$5,643	\$35,111

Scenario - 3

Kewaunee Power Station Detailed Cost Report

Scenario Number 3		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4b								
Undistributed								
2.01	Utility Staff	\$2,728	\$0	\$0	\$0	\$2,728	\$355	\$3,083
2.04	Insurance	\$0	\$0	\$0	\$997	\$997	\$150	\$1,147
2.06	Permits	\$0	\$0	\$0	\$922	\$922	\$138	\$1,060
2.07	Security Guard Force	\$836	\$0	\$0	\$0	\$836	\$125	\$961
2.08	Energy	\$0	\$0	\$0	\$168	\$168	\$25	\$193
2.10	HP Supplies	\$0	\$132	\$0	\$0	\$132	\$20	\$152
2.11	Supplies and Services	\$0	\$0	\$0	\$696	\$696	\$104	\$800
2.13	Severance	\$9,052	\$0	\$0	\$0	\$9,052	\$1,358	\$10,410
Undistributed	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806
Decon Pd 4b	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806

Scenario - 3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4c								
Distributed								
4.02	Decon Fuel Handling Building	\$652	\$501	\$721	\$0	\$1,874	\$431	\$2,305
4.03	Decon Auxiliary Building	\$95	\$145	\$221	\$0	\$461	\$106	\$567
4.04	Decon Technical Support Building	\$15	\$22	\$19	\$0	\$56	\$13	\$69
4.05	Decon Decontamination Building	\$6	\$3	\$19	\$0	\$28	\$7	\$35
4.06	Remove Spent Fuel Storage Racks	\$937	\$749	\$1,311	\$0	\$2,997	\$689	\$3,686
4.08	MARSSIM FSS for Structures	\$2,666	\$601	\$0	\$289	\$3,556	\$462	\$4,018
4.09	MARSSIM FSS for Land Areas	\$3,848	\$339	\$0	\$0	\$4,187	\$544	\$4,731
4.10	Prepare final report of dismantling program	\$60	\$1	\$0	\$0	\$61	\$8	\$69
Distributed	Subtotal	\$8,279	\$2,361	\$2,291	\$289	\$13,220	\$2,260	\$15,480
Undistributed								
2.01	Utility Staff	\$6,016	\$0	\$0	\$0	\$6,016	\$782	\$6,798
2.04	Insurance	\$0	\$0	\$0	\$369	\$369	\$55	\$424
2.06	Permits	\$0	\$0	\$0	\$439	\$439	\$66	\$505
2.07	Security Guard Force	\$619	\$0	\$0	\$0	\$619	\$93	\$712
2.08	Energy	\$0	\$0	\$0	\$183	\$183	\$27	\$210
2.10	HP Supplies	\$0	\$220	\$0	\$0	\$220	\$33	\$253
2.11	Supplies and Services	\$0	\$0	\$0	\$1,238	\$1,238	\$186	\$1,424
2.13	Severance	\$3,587	\$0	\$0	\$0	\$3,587	\$538	\$4,125
Undistributed	Subtotal	\$10,222	\$220	\$0	\$2,229	\$12,671	\$1,780	\$14,451
Decon Pd 4c	Subtotal	\$18,501	\$2,581	\$2,291	\$2,518	\$25,891	\$4,040	\$29,931

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination Subtotal		\$180,379	\$22,975	\$54,680	\$27,786	\$285,820	\$48,493	\$334,313
B. Spent Fuel								
Dry Pd 1								
Distributed								
1.01	Design Spent Fuel Support System Modifications	\$323	\$4	\$0	\$0	\$327	\$43	\$370
1.02	Design Control Room Relocation	\$309	\$4	\$0	\$0	\$313	\$41	\$354
1.03	Design Spent Fuel Storage Security Modifications	\$243	\$3	\$0	\$0	\$246	\$32	\$278
2.01	Install Spent Fuel Pool System Modifications	\$134	\$1,517	\$0	\$0	\$1,651	\$215	\$1,866
2.02	Implement Control Room Modifications	\$956	\$1,434	\$0	\$0	\$2,390	\$311	\$2,701
2.03	Implement Spent Fuel Pool Security Modifications	\$500	\$750	\$0	\$0	\$1,250	\$163	\$1,413
Distributed	Subtotal	\$2,465	\$3,712	\$0	\$0	\$6,177	\$805	\$6,982
Undistributed								
2.01	Utility Spent Fuel Staff	\$775	\$0	\$0	\$0	\$775	\$101	\$876
2.03	Fuel Pool Maintenance and Operation Staff	\$3,590	\$0	\$0	\$0	\$3,590	\$538	\$4,128
2.06	Insurance	\$0	\$0	\$0	\$1,008	\$1,008	\$151	\$1,159
2.07	Permits	\$0	\$0	\$0	\$1,943	\$1,943	\$291	\$2,234
2.08	Security Guard Force	\$3,601	\$0	\$0	\$0	\$3,601	\$540	\$4,141
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$256	\$256	\$38	\$294
2.10	Energy	\$0	\$0	\$0	\$367	\$367	\$55	\$422
2.11	Supplies and Services	\$0	\$0	\$0	\$3	\$3	\$0	\$3
2.12	HP Supplies	\$0	\$125	\$0	\$0	\$125	\$19	\$144
Undistributed	Subtotal	\$7,966	\$125	\$0	\$3,577	\$11,668	\$1,733	\$13,401
Dry Pd 1	Subtotal	\$10,431	\$3,837	\$0	\$3,577	\$17,845	\$2,538	\$20,383

Scenario -3

Kewaunee Power Station Detailed Cost Report

Scenario Number 3		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 2								
Distributed								
2.04	NRC Review and Approval of 10 CFR Part 72 License Application	\$0	\$0	\$0	\$410	\$410	\$53	\$463
2.05	Purchase of Dry Storage Modules for Fuel Assemblies	\$0	\$12,588	\$0	\$0	\$12,588	\$2,895	\$15,483
2.06	Purchase of Dry Storage Modules for GTCC Waste	\$0	\$1,049	\$0	\$0	\$1,049	\$241	\$1,290
Distributed	Subtotal	\$0	\$13,637	\$0	\$410	\$14,047	\$3,189	\$17,236
Undistributed								
2.01	Utility Spent Fuel Staff	\$3,458	\$0	\$0	\$0	\$3,458	\$450	\$3,908
2.03	Fuel Pool Maintenance and Operation Staff	\$16,024	\$0	\$0	\$0	\$16,024	\$2,404	\$18,428
2.06	Insurance	\$0	\$0	\$0	\$4,501	\$4,501	\$675	\$5,176
2.07	Permits	\$0	\$0	\$0	\$8,671	\$8,671	\$1,301	\$9,972
2.08	Security Guard Force	\$16,072	\$0	\$0	\$0	\$16,072	\$2,411	\$18,483
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,144	\$1,144	\$172	\$1,316
2.10	Energy	\$0	\$0	\$0	\$1,637	\$1,637	\$246	\$1,883
2.11	Supplies and Services	\$0	\$0	\$0	\$1,532	\$1,532	\$230	\$1,762
2.12	HP Supplies	\$0	\$560	\$0	\$0	\$560	\$84	\$644
Undistributed	Subtotal	\$35,554	\$560	\$0	\$17,485	\$53,599	\$7,973	\$61,572
Dry Pd 2	Subtotal	\$35,554	\$14,197	\$0	\$17,895	\$67,646	\$11,162	\$78,808

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 3								
Distributed								
3.01	NRC Review and Approval of 10 CFR Part 72 License Renewal	\$0	\$0	\$0	\$410	\$410	\$53	\$463
3.02	Preparation and NRC Review of License Termination Plan	\$55	\$0	\$0	\$96	\$151	\$27	\$178
3.03	Verification Survey of Horizontal Storage Modules	\$20	\$17	\$0	\$0	\$37	\$5	\$42
3.04	Preparation of Final Report on Decommissioning and NRC Review	\$55	\$0	\$0	\$96	\$151	\$20	\$171
Distributed	Subtotal	\$130	\$17	\$0	\$602	\$749	\$105	\$854
Undistributed								
2.01	Utility Spent Fuel Staff	\$26,112	\$0	\$0	\$0	\$26,112	\$3,395	\$29,507
2.04	Additional Staff for Spent Fuel Shipping	\$3,205	\$0	\$0	\$0	\$3,205	\$417	\$3,622
2.06	Insurance	\$0	\$0	\$0	\$11,341	\$11,341	\$1,701	\$13,042
2.07	Permits	\$0	\$0	\$0	\$9,496	\$9,496	\$1,424	\$10,920
2.08	Security Guard Force	\$25,824	\$0	\$0	\$0	\$25,824	\$3,874	\$29,698
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,378	\$1,378	\$207	\$1,585
2.10	Energy	\$0	\$0	\$0	\$2,220	\$2,220	\$333	\$2,553
2.11	Supplies and Services	\$0	\$0	\$0	\$2,370	\$2,370	\$356	\$2,726
2.12	HP Supplies	\$0	\$980	\$0	\$0	\$980	\$147	\$1,127
2.14	Severance	\$2,688	\$0	\$0	\$0	\$2,688	\$403	\$3,091
Undistributed	Subtotal	\$57,829	\$980	\$0	\$26,805	\$85,614	\$12,257	\$97,871
Dry Pd 3	Subtotal	\$57,959	\$997	\$0	\$27,407	\$86,363	\$12,362	\$98,725

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3	License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified	
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 4								
Distributed								
4.01	Demolition of ISFSI Support Structures	\$438	\$142	\$59	\$0	\$639	\$97	\$736
4.02	Clean Demolition of ISFSI	\$339	\$152	\$231	\$0	\$722	\$109	\$831
Distributed	Subtotal	\$777	\$294	\$290	\$0	\$1,361	\$206	\$1,567
Undistributed								
2.01	Utility Spent Fuel Staff	\$252	\$0	\$0	\$0	\$252	\$33	\$285
2.07	Permits	\$0	\$0	\$0	\$6	\$6	\$1	\$7
2.08	Security Guard Force	\$97	\$0	\$0	\$0	\$97	\$15	\$112
2.10	Energy	\$0	\$0	\$0	\$10	\$10	\$2	\$12
2.11	Supplies and Services	\$0	\$0	\$0	\$13	\$13	\$2	\$15
2.12	HP Supplies	\$0	\$12	\$0	\$0	\$12	\$2	\$14
2.14	Severance	\$1,613	\$0	\$0	\$0	\$1,613	\$242	\$1,855
Undistributed	Subtotal	\$1,962	\$12	\$0	\$29	\$2,003	\$297	\$2,300
Dry Pd 4	Subtotal	\$2,739	\$306	\$290	\$29	\$3,364	\$503	\$3,867

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
B. Spent Fuel	Subtotal	\$106,683	\$19,337	\$290	\$48,908	\$175,218	\$26,565	\$201,783
C. Greenfield								
Grn Pd 1								
Distributed								
1.01	Demolish Containment Building	\$1,608	\$346	\$177	\$0	\$2,131	\$312	\$2,443
1.02	Demolish Turbine Building	\$849	\$240	\$46	\$0	\$1,135	\$172	\$1,307
1.03	Demolish Auxiliary Building	\$778	\$256	\$136	\$0	\$1,170	\$178	\$1,348
1.04	Demolish Fuel Handling Building	\$374	\$131	\$68	\$0	\$573	\$88	\$661
1.05	Demolish Decontamination Building	\$18	\$5	\$1	\$0	\$24	\$4	\$28
1.06	Demolish Steam Generator Storage Building	\$31	\$9	\$2	\$0	\$42	\$6	\$48
1.07	Demolish Non-Essential Structures	\$1,201	\$1,230	\$128	\$0	\$2,559	\$456	\$3,015
1.08	Clean Building Demolition Equipment	\$0	\$561	\$0	\$0	\$561	\$129	\$690
2.02	Remove temporary structures	\$25	\$21	\$0	\$0	\$46	\$8	\$54
Distributed	Subtotal	\$4,884	\$2,799	\$558	\$0	\$8,241	\$1,353	\$9,594
Undistributed								
2.01	Utility Staff	\$3,496	\$0	\$0	\$0	\$3,496	\$455	\$3,951
2.06	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.07	Energy	\$0	\$0	\$0	\$114	\$114	\$17	\$131
Undistributed	Subtotal	\$3,819	\$0	\$0	\$114	\$3,933	\$520	\$4,453
Grn Pd 1	Subtotal	\$8,703	\$2,799	\$558	\$114	\$12,174	\$1,873	\$14,047

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3

License Status Extended

Unit 1 Shut Down Date

12/21/2033

Decommissioning Alternative Decon

Fuel Pool Systems Modified

Spent Fuel Alternative Dry

Repository Opening Date 1/1/2012

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Grn Pd 2								
Distributed								
2.01	Site Restoration Equipment	\$0	\$37	\$0	\$0	\$37	\$8	\$45
2.03	Backfill and grade	\$303	\$221	\$0	\$0	\$524	\$90	\$614
Distributed	Subtotal	\$303	\$258	\$0	\$0	\$561	\$98	\$659
Undistributed								
2.01	Utility Staff	\$314	\$0	\$0	\$0	\$314	\$41	\$355
2.06	Security Guard Force	\$43	\$0	\$0	\$0	\$43	\$6	\$49
2.07	Energy	\$0	\$0	\$0	\$11	\$11	\$2	\$13
2.08	Severance	\$3,519	\$0	\$0	\$0	\$3,519	\$528	\$4,047
Undistributed	Subtotal	\$3,876	\$0	\$0	\$11	\$3,887	\$577	\$4,464
Grn Pd 2	Subtotal	\$4,179	\$258	\$0	\$11	\$4,448	\$675	\$5,123

Scenario -3
Kewaunee Power Station Detailed Cost Report

Scenario Number 3

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
C. Greenfield	Subtotal	\$12,882	\$3,057	\$558	\$125	\$16,622	\$2,548	\$19,170
Scenario No. 3	Total	\$299,944	\$45,369	\$55,528	\$76,819	\$477,660	\$77,606	\$555,266

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination								
Decon Pd 1								
Distributed								
1.01	Planning and Design of Primary System Decontamination	\$181	\$1	\$0	\$0	\$182	\$24	\$206
1.03	Planning For Asbestos Removal	\$117	\$1	\$0	\$0	\$118	\$15	\$133
1.04	Planning and Design of Cold and Dark Site Repowering	\$516	\$5	\$0	\$0	\$521	\$68	\$589
1.05	Design Containment Access Modifications	\$199	\$3	\$0	\$0	\$202	\$26	\$228
1.06	Planning and Design of Site Characterization	\$282	\$2	\$0	\$0	\$284	\$37	\$321
1.07	Administrative activities	\$661	\$3	\$0	\$0	\$664	\$86	\$750
1.08	Preparation of Decommissioning Licensing Documents	\$1,441	\$5	\$0	\$0	\$1,446	\$188	\$1,634
1.09	Decommissioning Planning and Design	\$215	\$0	\$0	\$0	\$215	\$28	\$243
1.10	Prepare Integrated Work Sequence and Schedule	\$126	\$0	\$0	\$0	\$126	\$16	\$142
1.11	Prepare Activity Specifications	\$2,305	\$14	\$0	\$0	\$2,319	\$302	\$2,621
1.12	Prepare Detailed Work Procedures	\$2,085	\$5	\$0	\$0	\$2,090	\$272	\$2,362
1.13	Prepare License Termination Plan	\$285	\$7	\$0	\$0	\$292	\$38	\$330
1.14	Prepare Written Notification of Cessation of Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.15	Prepare Written Notification of Fuel Removal from Vessel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.01	Baseline Radiation Survey	\$409	\$80	\$0	\$0	\$489	\$64	\$553
Distributed	Subtotal	\$8,822	\$126	\$0	\$0	\$8,948	\$1,164	\$10,112
Undistributed								
2.01	Utility Staff	\$34,675	\$0	\$0	\$0	\$34,675	\$4,508	\$39,183
2.04	Insurance	\$0	\$0	\$0	\$793	\$793	\$119	\$912
2.05	Gross Receipts Taxes	\$0	\$0	\$0	\$5,810	\$5,810	\$872	\$6,682
2.06	Permits	\$0	\$0	\$0	\$944	\$944	\$142	\$1,086
2.07	Security Guard Force	\$1,329	\$0	\$0	\$0	\$1,329	\$199	\$1,528

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Extended
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
2.08	Energy	\$0	\$0	\$0	\$1,686	\$1,686	\$253	\$1,939
2.10	HP Supplies	\$0	\$808	\$0	\$0	\$808	\$121	\$929
2.11	Supplies and Services	\$0	\$0	\$0	\$840	\$840	\$126	\$966
2.13	Severance	\$25,900	\$0	\$0	\$0	\$25,900	\$3,885	\$29,785
Undistributed	Subtotal	\$61,904	\$808	\$0	\$10,073	\$72,785	\$10,225	\$83,010
Decon Pd 1	Subtotal	\$70,726	\$934	\$0	\$10,073	\$81,733	\$11,389	\$93,122

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Extended
Fuel Pool Systems Modified
Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2								
Distributed								
2.02	Primary System Decon	\$917	\$285	\$1,280	\$0	\$2,482	\$323	\$2,805
2.03	Flush and Drain Non-Essential Systems	\$9	\$2	\$525	\$0	\$536	\$70	\$606
2.04	Modify Containment Access	\$300	\$450	\$0	\$0	\$750	\$98	\$848
2.05	Implement Cold and Dark	\$402	\$1,000	\$0	\$0	\$1,402	\$182	\$1,584
2.06	Asbestos Abatement of Pipe Insulation	\$10,703	\$818	\$526	\$0	\$12,047	\$2,771	\$14,818
2.07	Procure Non-Engineered Standard Equipment	\$0	\$2,487	\$0	\$0	\$2,487	\$323	\$2,810
2.08	Design, Specify, and Procure Special Items and Materials	\$754	\$4,571	\$0	\$0	\$5,325	\$692	\$6,017
2.09	Select Shipping Casks and Obtain Shipping Permits	\$27	\$27	\$0	\$0	\$54	\$7	\$61
2.10	Test Special Cutting and Handling Equipment and Train Operators	\$755	\$755	\$0	\$0	\$1,510	\$196	\$1,706
2.11	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	\$0	\$740	\$0	\$0	\$740	\$96	\$836
Distributed	Subtotal	\$13,867	\$11,135	\$2,331	\$0	\$27,333	\$4,758	\$32,091
Undistributed								
2.01	Utility Staff	\$9,102	\$0	\$0	\$0	\$9,102	\$1,183	\$10,285
2.04	Insurance	\$0	\$0	\$0	\$208	\$208	\$31	\$239
2.06	Permits	\$0	\$0	\$0	\$248	\$248	\$37	\$285
2.07	Security Guard Force	\$349	\$0	\$0	\$0	\$349	\$52	\$401
2.08	Energy	\$0	\$0	\$0	\$477	\$477	\$71	\$548
2.10	HP Supplies	\$0	\$212	\$0	\$0	\$212	\$32	\$244
2.11	Supplies and Services	\$0	\$0	\$0	\$1,794	\$1,794	\$269	\$2,063
Undistributed	Subtotal	\$9,451	\$212	\$0	\$2,727	\$12,390	\$1,675	\$14,065
Decon Pd 2	Subtotal	\$23,318	\$11,347	\$2,331	\$2,727	\$39,723	\$6,433	\$46,156

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3								
Distributed								
2.12	Finalize Residual Radiation Inventory	\$60	\$6	\$0	\$0	\$66	\$8	\$74
3.01	Remove Control Rod Drive (CRD) and Reactor Cavity Missile Shields	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.02	Remove Vessel Head Insulation, CRD Mechanisms and Cables, Air Ducts and Vessel H	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.03	Reactor Vessel Insulation Removal and Disposal	\$22	\$8	\$118	\$0	\$148	\$42	\$190
3.04	Reactor Internals Removal and Disposal	\$1,516	\$827	\$11,357	\$0	\$13,700	\$3,788	\$17,488
3.05	Reactor Vessel Removal	\$976	\$1,302	\$5,324	\$0	\$7,602	\$2,118	\$9,720
3.06	Decontaminate and Remove NonEssential Systems	\$2,781	\$297	\$5,956	\$0	\$9,034	\$2,078	\$11,112
3.07	Remove, Decon, Ship and Bury Steam Generators	\$1,501	\$1,525	\$9,083	\$0	\$12,109	\$2,785	\$14,894
3.08	Remove, Ship and Bury Pressurizer	\$308	\$353	\$1,588	\$0	\$2,249	\$517	\$2,766
3.10	Decontaminate and Remove Essential Systems	\$4,025	\$1,025	\$2,351	\$0	\$7,401	\$1,702	\$9,103
Distributed	Subtotal	\$11,189	\$5,343	\$35,777	\$0	\$52,309	\$13,038	\$65,347
Undistributed								
2.01	Utility Staff	\$25,000	\$0	\$0	\$0	\$25,000	\$3,250	\$28,250
2.04	Insurance	\$0	\$0	\$0	\$626	\$626	\$94	\$720
2.06	Permits	\$0	\$0	\$0	\$910	\$910	\$137	\$1,047
2.07	Security Guard Force	\$1,049	\$0	\$0	\$0	\$1,049	\$157	\$1,206
2.08	Energy	\$0	\$0	\$0	\$1,330	\$1,330	\$199	\$1,529
2.10	HP Supplies	\$0	\$1,205	\$0	\$0	\$1,205	\$181	\$1,386
2.11	Supplies and Services	\$0	\$0	\$0	\$4,924	\$4,924	\$739	\$5,663
2.13	Severance	\$6,121	\$0	\$0	\$0	\$6,121	\$918	\$7,039
Undistributed	Subtotal	\$32,170	\$1,205	\$0	\$7,790	\$41,165	\$5,675	\$46,840
Decon Pd 3	Subtotal	\$43,359	\$6,548	\$35,777	\$7,790	\$93,474	\$18,713	\$112,187

Scenario - 4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2017

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4a								
Distributed								
4.01	Decon Containment Building	\$1,294	\$742	\$8,266	\$0	\$10,302	\$2,370	\$12,672
4.07	Radiologically Contaminated Soil Remediation	\$27	\$336	\$5,642	\$0	\$6,005	\$1,381	\$7,386
4.11	Contaminated Roof Disposal	\$34	\$5	\$373	\$0	\$412	\$95	\$507
Distributed	Subtotal	\$1,355	\$1,083	\$14,281	\$0	\$16,719	\$3,846	\$20,565
Undistributed								
2.01	Utility Staff	\$5,725	\$0	\$0	\$0	\$5,725	\$744	\$6,469
2.04	Insurance	\$0	\$0	\$0	\$193	\$193	\$29	\$222
2.06	Permits	\$0	\$0	\$0	\$280	\$280	\$42	\$322
2.07	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.08	Energy	\$0	\$0	\$0	\$273	\$273	\$41	\$314
2.10	HP Supplies	\$0	\$350	\$0	\$0	\$350	\$53	\$403
2.11	Supplies and Services	\$0	\$0	\$0	\$1,149	\$1,149	\$172	\$1,321
2.13	Severance	\$4,456	\$0	\$0	\$0	\$4,456	\$668	\$5,124
Undistributed	Subtotal	\$10,504	\$350	\$0	\$1,895	\$12,749	\$1,797	\$14,546
Decon Pd 4a	Subtotal	\$11,859	\$1,433	\$14,281	\$1,895	\$29,468	\$5,643	\$35,111

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4b								
Undistributed								
2.01	Utility Staff	\$2,728	\$0	\$0	\$0	\$2,728	\$355	\$3,083
2.04	Insurance	\$0	\$0	\$0	\$997	\$997	\$150	\$1,147
2.06	Permits	\$0	\$0	\$0	\$922	\$922	\$138	\$1,060
2.07	Security Guard Force	\$836	\$0	\$0	\$0	\$836	\$125	\$961
2.08	Energy	\$0	\$0	\$0	\$168	\$168	\$25	\$193
2.10	HP Supplies	\$0	\$132	\$0	\$0	\$132	\$20	\$152
2.11	Supplies and Services	\$0	\$0	\$0	\$696	\$696	\$104	\$800
2.13	Severance	\$9,052	\$0	\$0	\$0	\$9,052	\$1,358	\$10,410
Undistributed	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806
Decon Pd 4b	Subtotal	\$12,616	\$132	\$0	\$2,783	\$15,531	\$2,275	\$17,806

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2017

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4c								
Distributed								
4.02	Decon Fuel Handling Building	\$652	\$501	\$721	\$0	\$1,874	\$431	\$2,305
4.03	Decon Auxiliary Building	\$95	\$145	\$221	\$0	\$461	\$106	\$567
4.04	Decon Technical Support Building	\$15	\$22	\$19	\$0	\$56	\$13	\$69
4.05	Decon Decontamination Building	\$6	\$3	\$19	\$0	\$28	\$7	\$35
4.06	Remove Spent Fuel Storage Racks	\$937	\$749	\$1,311	\$0	\$2,997	\$689	\$3,686
4.08	MARSSIM FSS for Structures	\$2,666	\$601	\$0	\$289	\$3,556	\$462	\$4,018
4.09	MARSSIM FSS for Land Areas	\$3,848	\$339	\$0	\$0	\$4,187	\$544	\$4,731
4.10	Prepare final report of dismantling program	\$60	\$1	\$0	\$0	\$61	\$8	\$69
Distributed	Subtotal	\$8,279	\$2,361	\$2,291	\$289	\$13,220	\$2,260	\$15,480
Undistributed								
2.01	Utility Staff	\$6,016	\$0	\$0	\$0	\$6,016	\$782	\$6,798
2.04	Insurance	\$0	\$0	\$0	\$369	\$369	\$55	\$424
2.06	Permits	\$0	\$0	\$0	\$439	\$439	\$66	\$505
2.07	Security Guard Force	\$619	\$0	\$0	\$0	\$619	\$93	\$712
2.08	Energy	\$0	\$0	\$0	\$183	\$183	\$27	\$210
2.10	HP Supplies	\$0	\$220	\$0	\$0	\$220	\$33	\$253
2.11	Supplies and Services	\$0	\$0	\$0	\$1,238	\$1,238	\$186	\$1,424
2.13	Severance	\$3,587	\$0	\$0	\$0	\$3,587	\$538	\$4,125
Undistributed	Subtotal	\$10,222	\$220	\$0	\$2,229	\$12,671	\$1,780	\$14,451
Decon Pd 4c	Subtotal	\$18,501	\$2,581	\$2,291	\$2,518	\$25,891	\$4,040	\$29,931

Scenario - 4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4	License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified	
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination Subtotal		\$180,379	\$22,975	\$54,680	\$27,786	\$285,820	\$48,493	\$334,313
B. Spent Fuel								
Dry Pd 1								
Distributed								
1.01	Design Spent Fuel Support System Modifications	\$323	\$4	\$0	\$0	\$327	\$43	\$370
1.02	Design Control Room Relocation	\$309	\$4	\$0	\$0	\$313	\$41	\$354
1.03	Design Spent Fuel Storage Security Modifications	\$243	\$3	\$0	\$0	\$246	\$32	\$278
2.01	Install Spent Fuel Pool System Modifications	\$134	\$1,517	\$0	\$0	\$1,651	\$215	\$1,866
2.02	Implement Control Room Modifications	\$956	\$1,434	\$0	\$0	\$2,390	\$311	\$2,701
2.03	Implement Spent Fuel Pool Security Modifications	\$500	\$750	\$0	\$0	\$1,250	\$163	\$1,413
Distributed	Subtotal	\$2,465	\$3,712	\$0	\$0	\$6,177	\$805	\$6,982
Undistributed								
2.01	Utility Spent Fuel Staff	\$775	\$0	\$0	\$0	\$775	\$101	\$876
2.03	Fuel Pool Maintenance and Operation Staff	\$3,590	\$0	\$0	\$0	\$3,590	\$538	\$4,128
2.06	Insurance	\$0	\$0	\$0	\$1,008	\$1,008	\$151	\$1,159
2.07	Permits	\$0	\$0	\$0	\$1,943	\$1,943	\$291	\$2,234
2.08	Security Guard Force	\$3,601	\$0	\$0	\$0	\$3,601	\$540	\$4,141
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$256	\$256	\$38	\$294
2.10	Energy	\$0	\$0	\$0	\$367	\$367	\$55	\$422
2.11	Supplies and Services	\$0	\$0	\$0	\$3	\$3	\$0	\$3
2.12	HP Supplies	\$0	\$125	\$0	\$0	\$125	\$19	\$144
Undistributed	Subtotal	\$7,966	\$125	\$0	\$3,577	\$11,668	\$1,733	\$13,401
Dry Pd 1	Subtotal	\$10,431	\$3,837	\$0	\$3,577	\$17,845	\$2,538	\$20,383

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 2								
Distributed								
2.04	NRC Review and Approval of 10 CFR Part 72 License Application	\$0	\$0	\$0	\$410	\$410	\$53	\$463
2.05	Purchase of Dry Storage Modules for Fuel Assemblies	\$0	\$15,735	\$0	\$0	\$15,735	\$3,619	\$19,354
2.06	Purchase of Dry Storage Modules for GTCC Waste	\$0	\$1,049	\$0	\$0	\$1,049	\$241	\$1,290
Distributed	Subtotal	\$0	\$16,784	\$0	\$410	\$17,194	\$3,913	\$21,107
Undistributed								
2.01	Utility Spent Fuel Staff	\$3,458	\$0	\$0	\$0	\$3,458	\$450	\$3,908
2.03	Fuel Pool Maintenance and Operation Staff	\$16,024	\$0	\$0	\$0	\$16,024	\$2,404	\$18,428
2.06	Insurance	\$0	\$0	\$0	\$4,501	\$4,501	\$675	\$5,176
2.07	Permits	\$0	\$0	\$0	\$8,671	\$8,671	\$1,301	\$9,972
2.08	Security Guard Force	\$16,072	\$0	\$0	\$0	\$16,072	\$2,411	\$18,483
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,144	\$1,144	\$172	\$1,316
2.10	Energy	\$0	\$0	\$0	\$1,637	\$1,637	\$246	\$1,883
2.11	Supplies and Services	\$0	\$0	\$0	\$1,532	\$1,532	\$230	\$1,762
2.12	HP Supplies	\$0	\$560	\$0	\$0	\$560	\$84	\$644
Undistributed	Subtotal	\$35,554	\$560	\$0	\$17,485	\$53,599	\$7,973	\$61,572
Dry Pd 2	Subtotal	\$35,554	\$17,344	\$0	\$17,895	\$70,793	\$11,886	\$82,679

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 3								
Distributed								
3.01	NRC Review and Approval of 10 CFR Part 72 License Renewal	\$0	\$0	\$0	\$410	\$410	\$53	\$463
3.02	Preparation and NRC Review of License Termination Plan	\$55	\$0	\$0	\$96	\$151	\$27	\$178
3.03	Verification Survey of Horizontal Storage Modules	\$26	\$18	\$0	\$0	\$44	\$6	\$50
3.04	Preparation of Final Report on Decommissioning and NRC Review	\$55	\$0	\$0	\$96	\$151	\$20	\$171
Distributed	Subtotal	\$136	\$18	\$0	\$602	\$756	\$106	\$862
Undistributed								
2.01	Utility Spent Fuel Staff	\$33,219	\$0	\$0	\$0	\$33,219	\$4,318	\$37,537
2.04	Additional Staff for Spent Fuel Shipping	\$4,078	\$0	\$0	\$0	\$4,078	\$530	\$4,608
2.06	Insurance	\$0	\$0	\$0	\$14,427	\$14,427	\$2,164	\$16,591
2.07	Permits	\$0	\$0	\$0	\$12,080	\$12,080	\$1,812	\$13,892
2.08	Security Guard Force	\$32,853	\$0	\$0	\$0	\$32,853	\$4,928	\$37,781
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,754	\$1,754	\$263	\$2,017
2.10	Energy	\$0	\$0	\$0	\$2,824	\$2,824	\$424	\$3,248
2.11	Supplies and Services	\$0	\$0	\$0	\$3,015	\$3,015	\$452	\$3,467
2.12	HP Supplies	\$0	\$1,247	\$0	\$0	\$1,247	\$187	\$1,434
2.14	Severance	\$2,688	\$0	\$0	\$0	\$2,688	\$403	\$3,091
Undistributed	Subtotal	\$72,838	\$1,247	\$0	\$34,100	\$108,185	\$15,481	\$123,666
Dry Pd 3	Subtotal	\$72,974	\$1,265	\$0	\$34,702	\$108,941	\$15,587	\$124,528

Scenario - 4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2017		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 4								
Distributed								
4.01	Demolition of ISFSI Support Structures	\$438	\$142	\$59	\$0	\$639	\$97	\$736
4.02	Clean Demolition of ISFSI	\$421	\$184	\$297	\$0	\$902	\$136	\$1,038
Distributed	Subtotal	\$859	\$326	\$356	\$0	\$1,541	\$233	\$1,774
Undistributed								
2.01	Utility Spent Fuel Staff	\$252	\$0	\$0	\$0	\$252	\$33	\$285
2.07	Permits	\$0	\$0	\$0	\$6	\$6	\$1	\$7
2.08	Security Guard Force	\$97	\$0	\$0	\$0	\$97	\$15	\$112
2.10	Energy	\$0	\$0	\$0	\$10	\$10	\$2	\$12
2.11	Supplies and Services	\$0	\$0	\$0	\$13	\$13	\$2	\$15
2.12	HP Supplies	\$0	\$12	\$0	\$0	\$12	\$2	\$14
2.14	Severance	\$1,613	\$0	\$0	\$0	\$1,613	\$242	\$1,855
Undistributed	Subtotal	\$1,962	\$12	\$0	\$29	\$2,003	\$297	\$2,300
Dry Pd 4	Subtotal	\$2,821	\$338	\$356	\$29	\$3,544	\$530	\$4,074

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

License Status Extended

Unit 1 Shut Down Date

12/21/2033

Decommissioning Alternative Decon

Fuel Pool Systems Modified

Spent Fuel Alternative Dry

Repository Opening Date 1/1/2017

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
B. Spent Fuel	Subtotal	\$121,780	\$22,784	\$356	\$56,203	\$201,123	\$30,541	\$231,664
C. Greenfield								
Grn Pd 1								
Distributed								
1.01	Demolish Containment Building	\$1,608	\$346	\$177	\$0	\$2,131	\$312	\$2,443
1.02	Demolish Turbine Building	\$849	\$240	\$46	\$0	\$1,135	\$172	\$1,307
1.03	Demolish Auxiliary Building	\$778	\$256	\$136	\$0	\$1,170	\$178	\$1,348
1.04	Demolish Fuel Handling Building	\$374	\$131	\$68	\$0	\$573	\$88	\$661
1.05	Demolish Decontamination Building	\$18	\$5	\$1	\$0	\$24	\$4	\$28
1.06	Demolish Steam Generator Storage Building	\$31	\$9	\$2	\$0	\$42	\$6	\$48
1.07	Demolish Non-Essential Structures	\$1,201	\$1,230	\$128	\$0	\$2,559	\$456	\$3,015
1.08	Clean Building Demolition Equipment	\$0	\$561	\$0	\$0	\$561	\$129	\$690
2.02	Remove temporary structures	\$25	\$21	\$0	\$0	\$46	\$8	\$54
Distributed	Subtotal	\$4,884	\$2,799	\$558	\$0	\$8,241	\$1,353	\$9,594
Undistributed								
2.01	Utility Staff	\$3,496	\$0	\$0	\$0	\$3,496	\$455	\$3,951
2.06	Security Guard Force	\$323	\$0	\$0	\$0	\$323	\$48	\$371
2.07	Energy	\$0	\$0	\$0	\$114	\$114	\$17	\$131
Undistributed	Subtotal	\$3,819	\$0	\$0	\$114	\$3,933	\$520	\$4,453
Grn Pd 1	Subtotal	\$8,703	\$2,799	\$558	\$114	\$12,174	\$1,873	\$14,047

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2017

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Grn Pd 2								
Distributed								
2.01	Site Restoration Equipment	\$0	\$37	\$0	\$0	\$37	\$8	\$45
2.03	Backfill and grade	\$303	\$221	\$0	\$0	\$524	\$90	\$614
Distributed	Subtotal	\$303	\$258	\$0	\$0	\$561	\$98	\$659
Undistributed								
2.01	Utility Staff	\$314	\$0	\$0	\$0	\$314	\$41	\$355
2.06	Security Guard Force	\$43	\$0	\$0	\$0	\$43	\$6	\$49
2.07	Energy	\$0	\$0	\$0	\$11	\$11	\$2	\$13
2.08	Severance	\$3,519	\$0	\$0	\$0	\$3,519	\$528	\$4,047
Undistributed	Subtotal	\$3,876	\$0	\$0	\$11	\$3,887	\$577	\$4,464
Grn Pd 2	Subtotal	\$4,179	\$258	\$0	\$11	\$4,448	\$675	\$5,123

Scenario -4
Kewaunee Power Station Detailed Cost Report

Scenario Number 4

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2017

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
C. Greenfield	Subtotal	\$12,882	\$3,057	\$558	\$125	\$16,622	\$2,548	\$19,170
Scenario No. 4	Total	\$315,041	\$48,816	\$55,594	\$84,114	\$503,565	\$81,582	\$585,147

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination								
Decon Pd 1								
Distributed								
1.01	Planning and Design of Primary System Decontamination	\$181	\$1	\$0	\$0	\$182	\$24	\$206
1.02	Select Decommissioning General Contractor	\$228	\$3	\$0	\$0	\$231	\$30	\$261
1.03	Planning For Asbestos Removal	\$117	\$1	\$0	\$0	\$118	\$15	\$133
1.04	Planning and Design of Cold and Dark Site Repowering	\$516	\$5	\$0	\$0	\$521	\$68	\$589
1.05	Design Containment Access Modifications	\$199	\$3	\$0	\$0	\$202	\$26	\$228
1.06	Planning and Design of Site Characterization	\$282	\$2	\$0	\$0	\$284	\$37	\$321
1.07	Administrative activities	\$661	\$3	\$0	\$0	\$664	\$86	\$750
1.08	Preparation of Decommissioning Licensing Documents	\$1,441	\$5	\$0	\$0	\$1,446	\$188	\$1,634
1.09	Decommissioning Planning and Design	\$215	\$0	\$0	\$0	\$215	\$28	\$243
1.10	Prepare Integrated Work Sequence and Schedule	\$126	\$0	\$0	\$0	\$126	\$16	\$142
1.11	Prepare Activity Specifications	\$2,305	\$14	\$0	\$0	\$2,319	\$302	\$2,621
1.12	Prepare Detailed Work Procedures	\$2,085	\$5	\$0	\$0	\$2,090	\$272	\$2,362
1.13	Prepare License Termination Plan	\$285	\$7	\$0	\$0	\$292	\$38	\$330
1.14	Prepare Written Notification of Cessation of Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.15	Prepare Written Notification of Fuel Removal from Vessel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.01	Baseline Radiation Survey	\$409	\$80	\$0	\$0	\$489	\$64	\$553
Distributed	Subtotal	\$9,050	\$129	\$0	\$0	\$9,179	\$1,194	\$10,373
Undistributed								
2.01	Utility Staff	\$332	\$0	\$0	\$0	\$332	\$43	\$375
2.02	Third Party Staff	\$36,008	\$0	\$0	\$0	\$36,008	\$4,681	\$40,689
2.03	Decommissioning General Contractor Staff	\$3,931	\$0	\$0	\$0	\$3,931	\$511	\$4,442
2.04	Insurance	\$0	\$0	\$0	\$793	\$793	\$119	\$912

Scenario - 5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status

Existing

Fuel Pool Systems

Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
2.05	Gross Receipts Taxes	\$0	\$0	\$0	\$5,810	\$5,810	\$872	\$6,682
2.06	Permits	\$0	\$0	\$0	\$944	\$944	\$142	\$1,086
2.07	Security Guard Force	\$1,962	\$0	\$0	\$0	\$1,962	\$294	\$2,256
2.08	Energy	\$0	\$0	\$0	\$1,686	\$1,686	\$253	\$1,939
2.10	HP Supplies	\$0	\$632	\$0	\$0	\$632	\$95	\$727
2.11	Supplies and Services	\$0	\$0	\$0	\$840	\$840	\$126	\$966
2.13	Severance	\$47,232	\$0	\$0	\$0	\$47,232	\$7,085	\$54,317
Undistributed	Subtotal	\$89,465	\$632	\$0	\$10,073	\$100,170	\$14,221	\$114,391
Decon Pd 1	Subtotal	\$98,515	\$761	\$0	\$10,073	\$109,349	\$15,415	\$124,764

Scenario -5

Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2								
Distributed								
2.02	Primary System Decon	\$917	\$285	\$1,280	\$0	\$2,482	\$323	\$2,805
2.03	Flush and Drain Non-Essential Systems	\$9	\$2	\$525	\$0	\$536	\$70	\$606
2.04	Modify Containment Access	\$300	\$450	\$0	\$0	\$750	\$98	\$848
2.05	Implement Cold and Dark	\$402	\$1,000	\$0	\$0	\$1,402	\$182	\$1,584
2.06	Asbestos Abatement of Pipe Insulation	\$10,703	\$818	\$526	\$0	\$12,047	\$2,771	\$14,818
2.07	Procure Non-Engineered Standard Equipment	\$0	\$2,487	\$0	\$0	\$2,487	\$323	\$2,810
2.08	Design, Specify, and Procure Special Items and Materials	\$754	\$4,571	\$0	\$0	\$5,325	\$692	\$6,017
2.09	Select Shipping Casks and Obtain Shipping Permits	\$27	\$27	\$0	\$0	\$54	\$7	\$61
2.10	Test Special Cutting and Handling Equipment and Train Operators	\$755	\$755	\$0	\$0	\$1,510	\$196	\$1,706
2.11	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	\$0	\$740	\$0	\$0	\$740	\$96	\$836
Distributed Subtotal		\$13,867	\$11,135	\$2,331	\$0	\$27,333	\$4,758	\$32,091
Undistributed								
2.01	Utility Staff	\$129	\$0	\$0	\$0	\$129	\$17	\$146
2.02	Third Party Staff	\$9,567	\$0	\$0	\$0	\$9,567	\$1,244	\$10,811
2.03	Decommissioning General Contractor Staff	\$5,147	\$0	\$0	\$0	\$5,147	\$669	\$5,816
2.04	Insurance	\$0	\$0	\$0	\$208	\$208	\$31	\$239
2.06	Permits	\$0	\$0	\$0	\$248	\$248	\$37	\$285
2.07	Security Guard Force	\$515	\$0	\$0	\$0	\$515	\$77	\$592
2.08	Energy	\$0	\$0	\$0	\$477	\$477	\$71	\$548
2.10	HP Supplies	\$0	\$189	\$0	\$0	\$189	\$28	\$217
2.10	HP Supplies	\$0	\$51	\$0	\$0	\$51	\$8	\$59
2.11	Supplies and Services	\$0	\$0	\$0	\$1,794	\$1,794	\$269	\$2,063
Undistributed Subtotal		\$15,358	\$240	\$0	\$2,727	\$18,325	\$2,451	\$20,776

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2	Subtotal	\$29,225	\$11,375	\$2,331	\$2,727	\$45,658	\$7,209	\$52,867

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3								
Distributed								
2.12	Finalize Residual Radiation Inventory	\$60	\$6	\$0	\$0	\$66	\$8	\$74
3.01	Remove Control Rod Drive (CRD) and Reactor Cavity Missile Shields	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.02	Remove Vessel Head Insulation, CRD Mechanisms and Cables, Air Ducts and Vessel H	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.03	Reactor Vessel Insulation Removal and Disposal	\$22	\$8	\$118	\$0	\$148	\$42	\$190
3.04	Reactor Internals Removal and Disposal	\$1,516	\$827	\$11,357	\$0	\$13,700	\$3,788	\$17,488
3.05	Reactor Vessel Removal	\$976	\$1,302	\$5,324	\$0	\$7,602	\$2,118	\$9,720
3.06	Decontaminate and Remove NonEssential Systems	\$2,781	\$297	\$5,956	\$0	\$9,034	\$2,078	\$11,112
3.07	Remove, Decon, Ship and Bury Steam Generators	\$1,501	\$1,525	\$9,083	\$0	\$12,109	\$2,785	\$14,894
3.08	Remove, Ship and Bury Pressurizer	\$308	\$353	\$1,588	\$0	\$2,249	\$517	\$2,766
3.10	Decontaminate and Remove Essential Systems	\$4,025	\$1,025	\$2,351	\$0	\$7,401	\$1,702	\$9,103
Distributed	Subtotal	\$11,189	\$5,343	\$35,777	\$0	\$52,309	\$13,038	\$65,347
Undistributed								
2.01	Utility Staff	\$388	\$0	\$0	\$0	\$388	\$50	\$438
2.02	Third Party Staff	\$21,380	\$0	\$0	\$0	\$21,380	\$2,779	\$24,159
2.03	Decommissioning General Contractor Staff	\$19,811	\$0	\$0	\$0	\$19,811	\$2,575	\$22,386
2.04	Insurance	\$0	\$0	\$0	\$626	\$626	\$94	\$720
2.06	Permits	\$0	\$0	\$0	\$910	\$910	\$137	\$1,047
2.07	Security Guard Force	\$1,548	\$0	\$0	\$0	\$1,548	\$232	\$1,780
2.08	Energy	\$0	\$0	\$0	\$1,330	\$1,330	\$199	\$1,529
2.10	HP Supplies	\$0	\$512	\$0	\$0	\$512	\$77	\$589
2.10	HP Supplies	\$0	\$720	\$0	\$0	\$720	\$108	\$828
2.11	Supplies and Services	\$0	\$0	\$0	\$4,924	\$4,924	\$739	\$5,663
Undistributed	Subtotal	\$43,127	\$1,232	\$0	\$7,790	\$52,149	\$6,990	\$59,139

Scenario - 5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status

Existing

Fuel Pool Systems

Modified

Repository Opening Date

1/1/2012

Unit 1 Shut Down Date

12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3	Subtotal	\$54,316	\$6,575	\$35,777	\$7,790	\$104,458	\$20,028	\$124,486

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut-Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4a								
Distributed								
4.01	Decon Containment Building	\$1,294	\$742	\$8,266	\$0	\$10,302	\$2,370	\$12,672
4.07	Radiologically Contaminated Soil Remediation	\$27	\$336	\$5,642	\$0	\$6,005	\$1,381	\$7,386
4.11	Contaminated Roof Disposal	\$34	\$5	\$373	\$0	\$412	\$95	\$507
Distributed	Subtotal	\$1,355	\$1,083	\$14,281	\$0	\$16,719	\$3,846	\$20,565
Undistributed								
2.01	Utility Staff	\$120	\$0	\$0	\$0	\$120	\$16	\$136
2.02	Third Party Staff	\$5,240	\$0	\$0	\$0	\$5,240	\$681	\$5,921
2.03	Decommissioning General Contractor Staff	\$5,255	\$0	\$0	\$0	\$5,255	\$683	\$5,938
2.04	Insurance	\$0	\$0	\$0	\$193	\$193	\$29	\$222
2.06	Permits	\$0	\$0	\$0	\$280	\$280	\$42	\$322
2.07	Security Guard Force	\$477	\$0	\$0	\$0	\$477	\$72	\$549
2.08	Energy	\$0	\$0	\$0	\$273	\$273	\$41	\$314
2.10	HP Supplies	\$0	\$265	\$0	\$0	\$265	\$40	\$305
2.10	HP Supplies	\$0	\$94	\$0	\$0	\$94	\$14	\$108
2.11	Supplies and Services	\$0	\$0	\$0	\$1,149	\$1,149	\$172	\$1,321
Undistributed	Subtotal	\$11,092	\$359	\$0	\$1,895	\$13,346	\$1,790	\$15,136
Decon Pd 4a	Subtotal	\$12,447	\$1,442	\$14,281	\$1,895	\$30,065	\$5,636	\$35,701

Scenario - 5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4b								
Undistributed								
2.01	Utility Staff	\$618	\$0	\$0	\$0	\$618	\$80	\$698
2.02	Third Party Staff	\$3,021	\$0	\$0	\$0	\$3,021	\$393	\$3,414
2.04	Insurance	\$0	\$0	\$0	\$997	\$997	\$150	\$1,147
2.06	Permits	\$0	\$0	\$0	\$922	\$922	\$138	\$1,060
2.07	Security Guard Force	\$1,233	\$0	\$0	\$0	\$1,233	\$185	\$1,418
2.08	Energy	\$0	\$0	\$0	\$168	\$168	\$25	\$193
2.10	HP Supplies	\$0	\$77	\$0	\$0	\$77	\$12	\$89
2.11	Supplies and Services	\$0	\$0	\$0	\$696	\$696	\$104	\$800
Undistributed	Subtotal	\$4,872	\$77	\$0	\$2,783	\$7,732	\$1,087	\$8,819
Decon Pd 4b	Subtotal	\$4,872	\$77	\$0	\$2,783	\$7,732	\$1,087	\$8,819

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4c								
Distributed								
4.02	Decon Fuel Handling Building	\$652	\$501	\$721	\$0	\$1,874	\$431	\$2,305
4.03	Decon Auxiliary Building	\$95	\$145	\$221	\$0	\$461	\$106	\$567
4.04	Decon Technical Support Building	\$15	\$22	\$19	\$0	\$56	\$13	\$69
4.05	Decon Decontamination Building	\$6	\$3	\$19	\$0	\$28	\$7	\$35
4.06	Remove Spent Fuel Storage Racks	\$937	\$749	\$1,311	\$0	\$2,997	\$689	\$3,686
4.08	MARSSIM FSS for Structures	\$2,666	\$601	\$0	\$289	\$3,556	\$462	\$4,018
4.09	MARSSIM FSS for Land Areas	\$3,848	\$339	\$0	\$0	\$4,187	\$544	\$4,731
4.10	Prepare final report of dismantling program	\$60	\$1	\$0	\$0	\$61	\$8	\$69
Distributed	Subtotal	\$8,279	\$2,361	\$2,291	\$289	\$13,220	\$2,260	\$15,480
Undistributed								
2.01	Utility Staff	\$350	\$0	\$0	\$0	\$350	\$45	\$395
2.02	Third Party Staff	\$4,826	\$0	\$0	\$0	\$4,826	\$627	\$5,453
2.03	Decommissioning General Contractor Staff	\$5,372	\$0	\$0	\$0	\$5,372	\$698	\$6,070
2.04	Insurance	\$0	\$0	\$0	\$369	\$369	\$55	\$424
2.06	Permits	\$0	\$0	\$0	\$439	\$439	\$66	\$505
2.07	Security Guard Force	\$913	\$0	\$0	\$0	\$913	\$137	\$1,050
2.08	Energy	\$0	\$0	\$0	\$183	\$183	\$27	\$210
2.10	HP Supplies	\$0	\$57	\$0	\$0	\$57	\$9	\$66
2.10	HP Supplies	\$0	\$159	\$0	\$0	\$159	\$24	\$183
2.11	Supplies and Services	\$0	\$0	\$0	\$1,238	\$1,238	\$186	\$1,424
Undistributed	Subtotal	\$11,461	\$216	\$0	\$2,229	\$13,906	\$1,874	\$15,780
Decon Pd 4c	Subtotal	\$19,740	\$2,577	\$2,291	\$2,518	\$27,126	\$4,134	\$31,260

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination Subtotal		\$219,115	\$22,807	\$54,680	\$27,786	\$324,388	\$53,509	\$377,897
B. Spent Fuel								
Dry Pd 1								
Distributed								
1.01	Design Spent Fuel Support System Modifications	\$323	\$4	\$0	\$0	\$327	\$43	\$370
1.02	Design Control Room Relocation	\$309	\$4	\$0	\$0	\$313	\$41	\$354
1.03	Design Spent Fuel Storage Security Modifications	\$243	\$3	\$0	\$0	\$246	\$32	\$278
2.01	Install Spent Fuel Pool System Modifications	\$134	\$1,517	\$0	\$0	\$1,651	\$215	\$1,866
2.02	Implement Control Room Modifications	\$956	\$1,434	\$0	\$0	\$2,390	\$311	\$2,701
2.03	Implement Spent Fuel Pool Security Modifications	\$500	\$750	\$0	\$0	\$1,250	\$163	\$1,413
Distributed	Subtotal	\$2,465	\$3,712	\$0	\$0	\$6,177	\$805	\$6,982
Undistributed								
2.02	Third Party Spent Fuel Staff	\$1,032	\$0	\$0	\$0	\$1,032	\$134	\$1,166
2.03	Fuel Pool Maintenance and Operation Staff	\$4,370	\$0	\$0	\$0	\$4,370	\$655	\$5,025
2.06	Insurance	\$0	\$0	\$0	\$1,008	\$1,008	\$151	\$1,159
2.07	Permits	\$0	\$0	\$0	\$1,943	\$1,943	\$291	\$2,234
2.08	Security Guard Force	\$5,314	\$0	\$0	\$0	\$5,314	\$797	\$6,111
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$256	\$256	\$38	\$294
2.10	Energy	\$0	\$0	\$0	\$367	\$367	\$55	\$422
2.11	Supplies and Services	\$0	\$0	\$0	\$3	\$3	\$0	\$3
2.12	HP Supplies	\$0	\$125	\$0	\$0	\$125	\$19	\$144
Undistributed	Subtotal	\$10,716	\$125	\$0	\$3,577	\$14,418	\$2,140	\$16,558
Dry Pd 1	Subtotal	\$13,181	\$3,837	\$0	\$3,577	\$20,595	\$2,945	\$23,540

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 2								
Distributed								
2.04	NRC Review and Approval of 10 CFR Part 72 License Application	\$0	\$0	\$0	\$410	\$410	\$53	\$463
2.05	Purchase of Dry Storage Modules for Fuel Assemblies	\$0	\$19,931	\$0	\$0	\$19,931	\$4,584	\$24,515
2.06	Purchase of Dry Storage Modules for GTCC Waste	\$0	\$1,049	\$0	\$0	\$1,049	\$241	\$1,290
Distributed	Subtotal	\$0	\$20,980	\$0	\$410	\$21,390	\$4,878	\$26,268
Undistributed								
2.02	Third Party Spent Fuel Staff	\$4,608	\$0	\$0	\$0	\$4,608	\$599	\$5,207
2.03	Fuel Pool Maintenance and Operation Staff	\$19,506	\$0	\$0	\$0	\$19,506	\$2,926	\$22,432
2.06	Insurance	\$0	\$0	\$0	\$4,501	\$4,501	\$675	\$5,176
2.07	Permits	\$0	\$0	\$0	\$8,671	\$8,671	\$1,301	\$9,972
2.08	Security Guard Force	\$23,720	\$0	\$0	\$0	\$23,720	\$3,558	\$27,278
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,144	\$1,144	\$172	\$1,316
2.10	Energy	\$0	\$0	\$0	\$1,637	\$1,637	\$246	\$1,883
2.11	Supplies and Services	\$0	\$0	\$0	\$1,532	\$1,532	\$230	\$1,762
2.12	HP Supplies	\$0	\$560	\$0	\$0	\$560	\$84	\$644
Undistributed	Subtotal	\$47,834	\$560	\$0	\$17,485	\$65,879	\$9,791	\$75,670
Dry Pd 2	Subtotal	\$47,834	\$21,540	\$0	\$17,895	\$87,269	\$14,669	\$101,938

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5		License Status	Existing	Unit 1 Shut Down Date	12/21/2013
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 3								
Distributed								
3.01	NRC Review and Approval of 10 CFR Part 72 License Renewal	\$0	\$0	\$0	\$410	\$410	\$53	\$463
3.02	Preparation and NRC Review of License Termination Plan	\$55	\$0	\$0	\$96	\$151	\$27	\$178
3.03	Verification Survey of Horizontal Storage Modules	\$27	\$18	\$0	\$0	\$45	\$6	\$51
3.04	Preparation of Final Report on Decommissioning and NRC Review	\$55	\$0	\$0	\$96	\$151	\$20	\$171
Distributed	Subtotal	\$137	\$18	\$0	\$602	\$757	\$106	\$863
Undistributed								
2.01	Utility Spent Fuel Staff	\$1,157	\$0	\$0	\$0	\$1,157	\$150	\$1,307
2.02	Third Party Spent Fuel Staff	\$39,934	\$0	\$0	\$0	\$39,934	\$5,191	\$45,125
2.04	Additional Staff for Spent Fuel Shipping	\$4,670	\$0	\$0	\$0	\$4,670	\$607	\$5,277
2.06	Insurance	\$0	\$0	\$0	\$13,809	\$13,809	\$2,071	\$15,880
2.07	Permits	\$0	\$0	\$0	\$11,563	\$11,563	\$1,734	\$13,297
2.08	Security Guard Force	\$46,406	\$0	\$0	\$0	\$46,406	\$6,961	\$53,367
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,678	\$1,678	\$252	\$1,930
2.10	Energy	\$0	\$0	\$0	\$2,703	\$2,703	\$405	\$3,108
2.11	Supplies and Services	\$0	\$0	\$0	\$2,886	\$2,886	\$433	\$3,319
2.12	HP Supplies	\$0	\$1,194	\$0	\$0	\$1,194	\$179	\$1,373
Undistributed	Subtotal	\$92,167	\$1,194	\$0	\$32,639	\$126,000	\$17,983	\$143,983
Dry Pd 3	Subtotal	\$92,304	\$1,212	\$0	\$33,241	\$126,757	\$18,089	\$144,846

Scenario - 5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Existing

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 4								
Distributed								
4.01	Demolition of ISFSI Support Structures	\$438	\$142	\$59	\$0	\$639	\$97	\$736
4.02	Clean Demolition of ISFSI	\$434	\$189	\$308	\$0	\$931	\$140	\$1,071
Distributed	Subtotal	\$872	\$331	\$367	\$0	\$1,570	\$237	\$1,807
Undistributed								
2.01	Utility Spent Fuel Staff	\$18	\$0	\$0	\$0	\$18	\$2	\$20
2.02	Third Party Spent Fuel Staff	\$157	\$0	\$0	\$0	\$157	\$20	\$177
2.05	Decommissioning General Contractor Staff	\$94	\$0	\$0	\$0	\$94	\$12	\$106
2.07	Permits	\$0	\$0	\$0	\$6	\$6	\$1	\$7
2.08	Security Guard Force	\$143	\$0	\$0	\$0	\$143	\$21	\$164
2.10	Energy	\$0	\$0	\$0	\$10	\$10	\$2	\$12
2.11	Supplies and Services	\$0	\$0	\$0	\$13	\$13	\$2	\$15
Undistributed	Subtotal	\$412	\$0	\$0	\$29	\$441	\$60	\$501
Dry Pd 4	Subtotal	\$1,284	\$331	\$367	\$29	\$2,011	\$297	\$2,308

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
B. Spent Fuel	Subtotal	\$154,603	\$26,920	\$367	\$54,742	\$236,632	\$36,000	\$272,632
C. Greenfield								
Grn Pd 1								
Distributed								
1.01	Demolish Containment Building	\$1,608	\$346	\$177	\$0	\$2,131	\$312	\$2,443
1.02	Demolish Turbine Building	\$849	\$240	\$46	\$0	\$1,135	\$172	\$1,307
1.03	Demolish Auxiliary Building	\$778	\$256	\$136	\$0	\$1,170	\$178	\$1,348
1.04	Demolish Fuel Handling Building	\$374	\$131	\$68	\$0	\$573	\$88	\$661
1.05	Demolish Decontamination Building	\$18	\$5	\$1	\$0	\$24	\$4	\$28
1.06	Demolish Steam Generator Storage Building	\$31	\$9	\$2	\$0	\$42	\$6	\$48
1.07	Demolish Non-Essential Structures	\$1,201	\$1,230	\$128	\$0	\$2,559	\$456	\$3,015
1.08	Clean Building Demolition Equipment	\$0	\$561	\$0	\$0	\$561	\$129	\$690
2.02	Remove temporary structures	\$25	\$21	\$0	\$0	\$46	\$8	\$54
Distributed	Subtotal	\$4,884	\$2,799	\$558	\$0	\$8,241	\$1,353	\$9,594
Undistributed								
2.01	Utility Staff	\$59	\$0	\$0	\$0	\$59	\$8	\$67
2.02	Decommissioning General Contractor Staff	\$6,147	\$0	\$0	\$0	\$6,147	\$799	\$6,946
2.03	Third Party Staff	\$2,631	\$0	\$0	\$0	\$2,631	\$342	\$2,973
2.06	Security Guard Force	\$477	\$0	\$0	\$0	\$477	\$72	\$549
2.07	Energy	\$0	\$0	\$0	\$114	\$114	\$17	\$131
Undistributed	Subtotal	\$9,314	\$0	\$0	\$114	\$9,428	\$1,238	\$10,666
Grn Pd 1	Subtotal	\$14,198	\$2,799	\$558	\$114	\$17,669	\$2,591	\$20,260

Scenario -5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Existing
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Grn Pd 2								
Distributed								
2.01	Site Restoration Equipment	\$0	\$37	\$0	\$0	\$37	\$8	\$45
2.03	Backfill and grade	\$303	\$221	\$0	\$0	\$524	\$90	\$614
Distributed	Subtotal	\$303	\$258	\$0	\$0	\$561	\$98	\$659
Undistributed								
2.01	Utility Staff	\$8	\$0	\$0	\$0	\$8	\$1	\$9
2.02	Decommissioning General Contractor Staff	\$577	\$0	\$0	\$0	\$577	\$75	\$652
2.03	Third Party Staff	\$216	\$0	\$0	\$0	\$216	\$28	\$244
2.06	Security Guard Force	\$64	\$0	\$0	\$0	\$64	\$10	\$74
2.07	Energy	\$0	\$0	\$0	\$11	\$11	\$2	\$13
Undistributed	Subtotal	\$865	\$0	\$0	\$11	\$876	\$116	\$992
Grn Pd 2	Subtotal	\$1,168	\$258	\$0	\$11	\$1,437	\$214	\$1,651

Scenario - 5
Kewaunee Power Station Detailed Cost Report

Scenario Number 5

Decommissioning Alternative Decon
 Spent Fuel Alternative Dry

License Status Existing
 Fuel Pool Systems Modified
 Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2013

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
C. Greenfield	Subtotal	\$15,366	\$3,057	\$558	\$125	\$19,106	\$2,805	\$21,911
Scenario No. 5	Total	\$389,084	\$52,784	\$55,605	\$82,653	\$580,126	\$92,314	\$672,440

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination								
Decon Pd 1								
Distributed								
1.01	Planning and Design of Primary System Decontamination	\$181	\$1	\$0	\$0	\$182	\$24	\$206
1.02	Select Decommissioning General Contractor	\$228	\$3	\$0	\$0	\$231	\$30	\$261
1.03	Planning For Asbestos Removal	\$117	\$1	\$0	\$0	\$118	\$15	\$133
1.04	Planning and Design of Cold and Dark Site Repowering	\$516	\$5	\$0	\$0	\$521	\$68	\$589
1.05	Design Containment Access Modifications	\$199	\$3	\$0	\$0	\$202	\$26	\$228
1.06	Planning and Design of Site Characterization	\$282	\$2	\$0	\$0	\$284	\$37	\$321
1.07	Administrative activities	\$661	\$3	\$0	\$0	\$664	\$86	\$750
1.08	Preparation of Decommissioning Licensing Documents	\$1,441	\$5	\$0	\$0	\$1,446	\$188	\$1,634
1.09	Decommissioning Planning and Design	\$215	\$0	\$0	\$0	\$215	\$28	\$243
1.10	Prepare Integrated Work Sequence and Schedule	\$126	\$0	\$0	\$0	\$126	\$16	\$142
1.11	Prepare Activity Specifications	\$2,305	\$14	\$0	\$0	\$2,319	\$302	\$2,621
1.12	Prepare Detailed Work Procedures	\$2,085	\$5	\$0	\$0	\$2,090	\$272	\$2,362
1.13	Prepare License Termination Plan	\$285	\$7	\$0	\$0	\$292	\$38	\$330
1.14	Prepare Written Notification of Cessation of Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.15	Prepare Written Notification of Fuel Removal from Vessel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.01	Baseline Radiation Survey	\$409	\$80	\$0	\$0	\$489	\$64	\$553
Distributed	Subtotal	\$9,050	\$129	\$0	\$0	\$9,179	\$1,194	\$10,373
Undistributed								
2.01	Utility Staff	\$332	\$0	\$0	\$0	\$332	\$43	\$375
2.02	Third Party Staff	\$36,008	\$0	\$0	\$0	\$36,008	\$4,681	\$40,689
2.03	Decommissioning General Contractor Staff	\$3,931	\$0	\$0	\$0	\$3,931	\$511	\$4,442
2.04	Insurance	\$0	\$0	\$0	\$793	\$793	\$119	\$912

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
2.05	Gross Receipts Taxes	\$0	\$0	\$0	\$5,810	\$5,810	\$872	\$6,682
2.06	Permits	\$0	\$0	\$0	\$944	\$944	\$142	\$1,086
2.07	Security Guard Force	\$1,962	\$0	\$0	\$0	\$1,962	\$294	\$2,256
2.08	Energy	\$0	\$0	\$0	\$1,686	\$1,686	\$253	\$1,939
2.10	HP Supplies	\$0	\$632	\$0	\$0	\$632	\$95	\$727
2.11	Supplies and Services	\$0	\$0	\$0	\$840	\$840	\$126	\$966
2.13	Severance	\$47,232	\$0	\$0	\$0	\$47,232	\$7,085	\$54,317
Undistributed Subtotal		\$89,465	\$632	\$0	\$10,073	\$100,170	\$14,221	\$114,391
Decon Pd 1 Subtotal		\$98,515	\$761	\$0	\$10,073	\$109,349	\$15,415	\$124,764

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2								
Distributed								
2.02	Primary System Decon	\$917	\$285	\$1,280	\$0	\$2,482	\$323	\$2,805
2.03	Flush and Drain Non-Essential Systems	\$9	\$2	\$525	\$0	\$536	\$70	\$606
2.04	Modify Containment Access	\$300	\$450	\$0	\$0	\$750	\$98	\$848
2.05	Implement Cold and Dark	\$402	\$1,000	\$0	\$0	\$1,402	\$182	\$1,584
2.06	Asbestos Abatement of Pipe Insulation	\$10,703	\$818	\$526	\$0	\$12,047	\$2,771	\$14,818
2.07	Procure Non-Engineered Standard Equipment	\$0	\$2,487	\$0	\$0	\$2,487	\$323	\$2,810
2.08	Design, Specify, and Procure Special Items and Materials	\$754	\$4,571	\$0	\$0	\$5,325	\$692	\$6,017
2.09	Select Shipping Casks and Obtain Shipping Permits	\$27	\$27	\$0	\$0	\$54	\$7	\$61
2.10	Test Special Cutting and Handling Equipment and Train Operators	\$755	\$755	\$0	\$0	\$1,510	\$196	\$1,706
2.11	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	\$0	\$740	\$0	\$0	\$740	\$96	\$836
Distributed	Subtotal	\$13,867	\$11,135	\$2,331	\$0	\$27,333	\$4,758	\$32,091
Undistributed								
2.01	Utility Staff	\$129	\$0	\$0	\$0	\$129	\$17	\$146
2.02	Third Party Staff	\$9,567	\$0	\$0	\$0	\$9,567	\$1,244	\$10,811
2.03	Decommissioning General Contractor Staff	\$5,147	\$0	\$0	\$0	\$5,147	\$669	\$5,816
2.04	Insurance	\$0	\$0	\$0	\$208	\$208	\$31	\$239
2.06	Permits	\$0	\$0	\$0	\$248	\$248	\$37	\$285
2.07	Security Guard Force	\$515	\$0	\$0	\$0	\$515	\$77	\$592
2.08	Energy	\$0	\$0	\$0	\$477	\$477	\$71	\$548
2.10	HP Supplies	\$0	\$51	\$0	\$0	\$51	\$8	\$59
2.10	HP Supplies	\$0	\$189	\$0	\$0	\$189	\$28	\$217
2.11	Supplies and Services	\$0	\$0	\$0	\$1,794	\$1,794	\$269	\$2,063
Undistributed	Subtotal	\$15,358	\$240	\$0	\$2,727	\$18,325	\$2,451	\$20,776

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6

License Status Extended

Unit 1 Shut Down Date - 12/21/2033

Decommissioning Alternative Decon

Fuel Pool Systems Modified

Spent Fuel Alternative Dry

Repository Opening Date 1/1/2012

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 2	Subtotal	\$29,225	\$11,375	\$2,331	\$2,727	\$45,658	\$7,209	\$52,867

Scenario - 6

Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3								
Distributed								
2.12	Finalize Residual Radiation Inventory	\$60	\$6	\$0	\$0	\$66	\$8	\$74
3.01	Remove Control Rod Drive (CRD) and Reactor Cavity Missile Shields	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.02	Remove Vessel Head Insulation, CRD Mechanisms and Cables, Air Ducts and Vessel H	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3.03	Reactor Vessel Insulation Removal and Disposal	\$22	\$8	\$118	\$0	\$148	\$42	\$190
3.04	Reactor Internals Removal and Disposal	\$1,516	\$827	\$11,357	\$0	\$13,700	\$3,788	\$17,488
3.05	Reactor Vessel Removal	\$976	\$1,302	\$5,324	\$0	\$7,602	\$2,118	\$9,720
3.06	Decontaminate and Remove NonEssential Systems	\$2,781	\$297	\$5,956	\$0	\$9,034	\$2,078	\$11,112
3.07	Remove, Decon, Ship and Bury Steam Generators	\$1,501	\$1,525	\$9,083	\$0	\$12,109	\$2,785	\$14,894
3.08	Remove, Ship and Bury Pressurizer	\$308	\$353	\$1,588	\$0	\$2,249	\$517	\$2,766
3.10	Decontaminate and Remove Essential Systems	\$4,025	\$1,025	\$2,351	\$0	\$7,401	\$1,702	\$9,103
Distributed	Subtotal	\$11,189	\$5,343	\$35,777	\$0	\$52,309	\$13,038	\$65,347
Undistributed								
2.01	Utility Staff	\$388	\$0	\$0	\$0	\$388	\$50	\$438
2.02	Third Party Staff	\$21,380	\$0	\$0	\$0	\$21,380	\$2,779	\$24,159
2.03	Decommissioning General Contractor Staff	\$19,811	\$0	\$0	\$0	\$19,811	\$2,575	\$22,386
2.04	Insurance	\$0	\$0	\$0	\$626	\$626	\$94	\$720
2.06	Permits	\$0	\$0	\$0	\$910	\$910	\$137	\$1,047
2.07	Security Guard Force	\$1,548	\$0	\$0	\$0	\$1,548	\$232	\$1,780
2.08	Energy	\$0	\$0	\$0	\$1,330	\$1,330	\$199	\$1,529
2.10	HP Supplies	\$0	\$512	\$0	\$0	\$512	\$77	\$589
2.10	HP Supplies	\$0	\$720	\$0	\$0	\$720	\$108	\$828
2.11	Supplies and Services	\$0	\$0	\$0	\$4,924	\$4,924	\$739	\$5,663
Undistributed	Subtotal	\$43,127	\$1,232	\$0	\$7,790	\$52,149	\$6,990	\$59,139

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6	License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified	
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012	

Dollars in Thousands								
No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 3	Subtotal	\$54,316	\$6,575	\$35,777	\$7,790	\$104,458	\$20,028	\$124,486

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6	License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4a								
Distributed								
4.01	Decon Containment Building	\$1,294	\$742	\$8,266	\$0	\$10,302	\$2,370	\$12,672
4.07	Radiologically Contaminated Soil Remediation	\$27	\$336	\$5,642	\$0	\$6,005	\$1,381	\$7,386
4.11	Contaminated Roof Disposal	\$34	\$5	\$373	\$0	\$412	\$95	\$507
Distributed	Subtotal	\$1,355	\$1,083	\$14,281	\$0	\$16,719	\$3,846	\$20,565
Undistributed								
2.01	Utility Staff	\$120	\$0	\$0	\$0	\$120	\$16	\$136
2.02	Third Party Staff	\$5,240	\$0	\$0	\$0	\$5,240	\$681	\$5,921
2.03	Decommissioning General Contractor Staff	\$5,255	\$0	\$0	\$0	\$5,255	\$683	\$5,938
2.04	Insurance	\$0	\$0	\$0	\$193	\$193	\$29	\$222
2.06	Permits	\$0	\$0	\$0	\$280	\$280	\$42	\$322
2.07	Security Guard Force	\$477	\$0	\$0	\$0	\$477	\$72	\$549
2.08	Energy	\$0	\$0	\$0	\$273	\$273	\$41	\$314
2.10	HP Supplies	\$0	\$94	\$0	\$0	\$94	\$14	\$108
2.10	HP Supplies	\$0	\$265	\$0	\$0	\$265	\$40	\$305
2.11	Supplies and Services	\$0	\$0	\$0	\$1,149	\$1,149	\$172	\$1,321
Undistributed	Subtotal	\$11,092	\$359	\$0	\$1,895	\$13,346	\$1,790	\$15,136
Decon Pd 4a	Subtotal	\$12,447	\$1,442	\$14,281	\$1,895	\$30,065	\$5,636	\$35,701

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4b								
Undistributed								
2.01	Utility Staff	\$618	\$0	\$0	\$0	\$618	\$80	\$698
2.02	Third Party Staff	\$3,021	\$0	\$0	\$0	\$3,021	\$393	\$3,414
2.04	Insurance	\$0	\$0	\$0	\$997	\$997	\$150	\$1,147
2.06	Permits	\$0	\$0	\$0	\$922	\$922	\$138	\$1,060
2.07	Security Guard Force	\$1,233	\$0	\$0	\$0	\$1,233	\$185	\$1,418
2.08	Energy	\$0	\$0	\$0	\$168	\$168	\$25	\$193
2.10	HP Supplies	\$0	\$77	\$0	\$0	\$77	\$12	\$89
2.11	Supplies and Services	\$0	\$0	\$0	\$696	\$696	\$104	\$800
Undistributed	Subtotal	\$4,872	\$77	\$0	\$2,783	\$7,732	\$1,087	\$8,819
Decon Pd 4b	Subtotal	\$4,872	\$77	\$0	\$2,783	\$7,732	\$1,087	\$8,819

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date

12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Decon Pd 4c								
Distributed								
4.02	Decon Fuel Handling Building	\$652	\$501	\$721	\$0	\$1,874	\$431	\$2,305
4.03	Decon Auxiliary Building	\$95	\$145	\$221	\$0	\$461	\$106	\$567
4.04	Decon Technical Support Building	\$15	\$22	\$19	\$0	\$56	\$13	\$69
4.05	Decon Decontamination Building	\$6	\$3	\$19	\$0	\$28	\$7	\$35
4.06	Remove Spent Fuel Storage Racks	\$937	\$749	\$1,311	\$0	\$2,997	\$689	\$3,686
4.08	MARSSIM FSS for Structures	\$2,666	\$601	\$0	\$289	\$3,556	\$462	\$4,018
4.09	MARSSIM FSS for Land Areas	\$3,848	\$339	\$0	\$0	\$4,187	\$544	\$4,731
4.10	Prepare final report of dismantling program	\$60	\$1	\$0	\$0	\$61	\$8	\$69
Distributed	Subtotal	\$8,279	\$2,361	\$2,291	\$289	\$13,220	\$2,260	\$15,480
Undistributed								
2.01	Utility Staff	\$350	\$0	\$0	\$0	\$350	\$45	\$395
2.02	Third Party Staff	\$4,826	\$0	\$0	\$0	\$4,826	\$627	\$5,453
2.03	Decommissioning General Contractor Staff	\$5,372	\$0	\$0	\$0	\$5,372	\$698	\$6,070
2.04	Insurance	\$0	\$0	\$0	\$369	\$369	\$55	\$424
2.06	Permits	\$0	\$0	\$0	\$439	\$439	\$66	\$505
2.07	Security Guard Force	\$913	\$0	\$0	\$0	\$913	\$137	\$1,050
2.08	Energy	\$0	\$0	\$0	\$183	\$183	\$27	\$210
2.10	HP Supplies	\$0	\$57	\$0	\$0	\$57	\$9	\$66
2.10	HP Supplies	\$0	\$159	\$0	\$0	\$159	\$24	\$183
2.11	Supplies and Services	\$0	\$0	\$0	\$1,238	\$1,238	\$186	\$1,424
Undistributed	Subtotal	\$11,461	\$216	\$0	\$2,229	\$13,906	\$1,874	\$15,780
Decon Pd 4c	Subtotal	\$19,740	\$2,577	\$2,291	\$2,518	\$27,126	\$4,134	\$31,260

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6

License Status Extended

Unit 1 Shut Down Date

12/21/2033

Decommissioning Alternative Decon

Fuel Pool Systems Modified

Spent Fuel Alternative Dry

Repository Opening Date 1/1/2012

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
A. License Termination Subtotal		\$219,115	\$22,807	\$54,680	\$27,786	\$324,388	\$53,509	\$377,897
B. Spent Fuel								
Dry Pd 1								
Distributed								
1.01	Design Spent Fuel Support System Modifications	\$323	\$4	\$0	\$0	\$327	\$43	\$370
1.02	Design Control Room Relocation	\$309	\$4	\$0	\$0	\$313	\$41	\$354
1.03	Design Spent Fuel Storage Security Modifications	\$243	\$3	\$0	\$0	\$246	\$32	\$278
2.01	Install Spent Fuel Pool System Modifications	\$134	\$1,517	\$0	\$0	\$1,651	\$215	\$1,866
2.02	Implement Control Room Modifications	\$956	\$1,434	\$0	\$0	\$2,390	\$311	\$2,701
2.03	Implement Spent Fuel Pool Security Modifications	\$500	\$750	\$0	\$0	\$1,250	\$163	\$1,413
Distributed	Subtotal	\$2,465	\$3,712	\$0	\$0	\$6,177	\$805	\$6,982
Undistributed								
2.02	Third Party Spent Fuel Staff	\$1,032	\$0	\$0	\$0	\$1,032	\$134	\$1,166
2.03	Fuel Pool Maintenance and Operation Staff	\$4,370	\$0	\$0	\$0	\$4,370	\$655	\$5,025
2.06	Insurance	\$0	\$0	\$0	\$1,008	\$1,008	\$151	\$1,159
2.07	Permits	\$0	\$0	\$0	\$1,943	\$1,943	\$291	\$2,234
2.08	Security Guard Force	\$5,314	\$0	\$0	\$0	\$5,314	\$797	\$6,111
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$256	\$256	\$38	\$294
2.10	Energy	\$0	\$0	\$0	\$367	\$367	\$55	\$422
2.11	Supplies and Services	\$0	\$0	\$0	\$3	\$3	\$0	\$3
2.12	HP Supplies	\$0	\$125	\$0	\$0	\$125	\$19	\$144
Undistributed	Subtotal	\$10,716	\$125	\$0	\$3,577	\$14,418	\$2,140	\$16,558
Dry Pd 1	Subtotal	\$13,181	\$3,837	\$0	\$3,577	\$20,595	\$2,945	\$23,540

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 2								
Distributed								
2.04	NRC Review and Approval of 10 CFR Part 72 License Application	\$0	\$0	\$0	\$410	\$410	\$53	\$463
2.05	Purchase of Dry Storage Modules for Fuel Assemblies	\$0	\$12,588	\$0	\$0	\$12,588	\$2,895	\$15,483
2.06	Purchase of Dry Storage Modules for GTCC Waste	\$0	\$1,049	\$0	\$0	\$1,049	\$241	\$1,290
Distributed	Subtotal	\$0	\$13,637	\$0	\$410	\$14,047	\$3,189	\$17,236
Undistributed								
2.02	Third Party Spent Fuel Staff	\$4,608	\$0	\$0	\$0	\$4,608	\$599	\$5,207
2.03	Fuel Pool Maintenance and Operation Staff	\$19,506	\$0	\$0	\$0	\$19,506	\$2,926	\$22,432
2.06	Insurance	\$0	\$0	\$0	\$4,501	\$4,501	\$675	\$5,176
2.07	Permits	\$0	\$0	\$0	\$8,671	\$8,671	\$1,301	\$9,972
2.08	Security Guard Force	\$23,720	\$0	\$0	\$0	\$23,720	\$3,558	\$27,278
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,144	\$1,144	\$172	\$1,316
2.10	Energy	\$0	\$0	\$0	\$1,637	\$1,637	\$246	\$1,883
2.11	Supplies and Services	\$0	\$0	\$0	\$1,532	\$1,532	\$230	\$1,762
2.12	HP Supplies	\$0	\$560	\$0	\$0	\$560	\$84	\$644
Undistributed	Subtotal	\$47,834	\$560	\$0	\$17,485	\$65,879	\$9,791	\$75,670
Dry Pd 2	Subtotal	\$47,834	\$14,197	\$0	\$17,895	\$79,926	\$12,980	\$92,906

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 3								
Distributed								
3.01	NRC Review and Approval of 10 CFR Part 72 License Renewal	\$0	\$0	\$0	\$410	\$410	\$53	\$463
3.02	Preparation and NRC Review of License Termination Plan	\$55	\$0	\$0	\$96	\$151	\$27	\$178
3.03	Verification Survey of Horizontal Storage Modules	\$20	\$17	\$0	\$0	\$37	\$5	\$42
3.04	Preparation of Final Report on Decommissioning and NRC Review	\$55	\$0	\$0	\$96	\$151	\$20	\$171
Distributed	Subtotal	\$130	\$17	\$0	\$602	\$749	\$105	\$854
Undistributed								
2.01	Utility Spent Fuel Staff	\$950	\$0	\$0	\$0	\$950	\$124	\$1,074
2.02	Third Party Spent Fuel Staff	\$32,796	\$0	\$0	\$0	\$32,796	\$4,264	\$37,060
2.04	Additional Staff for Spent Fuel Shipping	\$3,835	\$0	\$0	\$0	\$3,835	\$499	\$4,334
2.06	Insurance	\$0	\$0	\$0	\$11,341	\$11,341	\$1,701	\$13,042
2.07	Permits	\$0	\$0	\$0	\$9,496	\$9,496	\$1,424	\$10,920
2.08	Security Guard Force	\$38,112	\$0	\$0	\$0	\$38,112	\$5,717	\$43,829
2.09	Spent Fuel Maintenance	\$0	\$0	\$0	\$1,378	\$1,378	\$207	\$1,585
2.10	Energy	\$0	\$0	\$0	\$2,220	\$2,220	\$333	\$2,553
2.11	Supplies and Services	\$0	\$0	\$0	\$2,370	\$2,370	\$356	\$2,726
2.12	HP Supplies	\$0	\$980	\$0	\$0	\$980	\$147	\$1,127
Undistributed	Subtotal	\$75,693	\$980	\$0	\$26,805	\$103,478	\$14,772	\$118,250
Dry Pd 3	Subtotal	\$75,823	\$997	\$0	\$27,407	\$104,227	\$14,877	\$119,104

Scenario -6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6		License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified		
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012		

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Dry Pd 4								
Distributed								
4.01	Demolition of ISFSI Support Structures	\$438	\$142	\$59	\$0	\$639	\$97	\$736
4.02	Clean Demolition of ISFSI	\$339	\$152	\$231	\$0	\$722	\$109	\$831
Distributed	Subtotal	\$777	\$294	\$290	\$0	\$1,361	\$206	\$1,567
Undistributed								
2.01	Utility Spent Fuel Staff	\$18	\$0	\$0	\$0	\$18	\$2	\$20
2.02	Third Party Spent Fuel Staff	\$157	\$0	\$0	\$0	\$157	\$20	\$177
2.05	Decommissioning General Contractor Staff	\$94	\$0	\$0	\$0	\$94	\$12	\$106
2.07	Permits	\$0	\$0	\$0	\$6	\$6	\$1	\$7
2.08	Security Guard Force	\$143	\$0	\$0	\$0	\$143	\$21	\$164
2.10	Energy	\$0	\$0	\$0	\$10	\$10	\$2	\$12
2.11	Supplies and Services	\$0	\$0	\$0	\$13	\$13	\$2	\$15
Undistributed	Subtotal	\$412	\$0	\$0	\$29	\$441	\$60	\$501
Dry Pd 4	Subtotal	\$1,189	\$294	\$290	\$29	\$1,802	\$266	\$2,068

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6

Decommissioning Alternative Decon
Spent Fuel Alternative Dry

License Status Extended
Fuel Pool Systems Modified
Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
B. Spent Fuel	Subtotal	\$138,027	\$19,325	\$290	\$48,908	\$206,550	\$31,068	\$237,618
C. Greenfield								
Grn Pd 1								
Distributed								
1.01	Demolish Containment Building	\$1,608	\$346	\$177	\$0	\$2,131	\$312	\$2,443
1.02	Demolish Turbine Building	\$849	\$240	\$46	\$0	\$1,135	\$172	\$1,307
1.03	Demolish Auxiliary Building	\$778	\$256	\$136	\$0	\$1,170	\$178	\$1,348
1.04	Demolish Fuel Handling Building	\$374	\$131	\$68	\$0	\$573	\$88	\$661
1.05	Demolish Decontamination Building	\$18	\$5	\$1	\$0	\$24	\$4	\$28
1.06	Demolish Steam Generator Storage Building	\$31	\$9	\$2	\$0	\$42	\$6	\$48
1.07	Demolish Non-Essential Structures	\$1,201	\$1,230	\$128	\$0	\$2,559	\$456	\$3,015
1.08	Clean Building Demolition Equipment	\$0	\$561	\$0	\$0	\$561	\$129	\$690
2.02	Remove temporary structures	\$25	\$21	\$0	\$0	\$46	\$8	\$54
Distributed	Subtotal	\$4,884	\$2,799	\$558	\$0	\$8,241	\$1,353	\$9,594
Undistributed								
2.01	Utility Staff	\$59	\$0	\$0	\$0	\$59	\$8	\$67
2.02	Decommissioning General Contractor Staff	\$6,147	\$0	\$0	\$0	\$6,147	\$799	\$6,946
2.03	Third Party Staff	\$2,631	\$0	\$0	\$0	\$2,631	\$342	\$2,973
2.06	Security Guard Force	\$477	\$0	\$0	\$0	\$477	\$72	\$549
2.07	Energy	\$0	\$0	\$0	\$114	\$114	\$17	\$131
Undistributed	Subtotal	\$9,314	\$0	\$0	\$114	\$9,428	\$1,238	\$10,666
Grn Pd 1	Subtotal	\$14,198	\$2,799	\$558	\$114	\$17,669	\$2,591	\$20,260

Scenario - 6
Kewaunee Power Station Detailed Cost Report

Scenario Number 6	License Status	Extended	Unit 1 Shut Down Date	12/21/2033
Decommissioning Alternative	Decon	Fuel Pool Systems	Modified	
Spent Fuel Alternative	Dry	Repository Opening Date	1/1/2012	

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
Grn Pd 2								
Distributed								
2.01	Site Restoration Equipment	\$0	\$37	\$0	\$0	\$37	\$8	\$45
2.03	Backfill and grade	\$303	\$221	\$0	\$0	\$524	\$90	\$614
Distributed	Subtotal	\$303	\$258	\$0	\$0	\$561	\$98	\$659
Undistributed								
2.01	Utility Staff	\$8	\$0	\$0	\$0	\$8	\$1	\$9
2.02	Decommissioning General Contractor Staff	\$577	\$0	\$0	\$0	\$577	\$75	\$652
2.03	Third Party Staff	\$216	\$0	\$0	\$0	\$216	\$28	\$244
2.06	Security Guard Force	\$64	\$0	\$0	\$0	\$64	\$10	\$74
2.07	Energy	\$0	\$0	\$0	\$11	\$11	\$2	\$13
Undistributed	Subtotal	\$865	\$0	\$0	\$11	\$876	\$116	\$992
Grn Pd 2	Subtotal	\$1,168	\$258	\$0	\$11	\$1,437	\$214	\$1,651

Scenario -6 **Kewaunee Power Station Detailed Cost Report**

Scenario Number 6

Decommissioning Alternative Decon

Spent Fuel Alternative Dry

License Status Extended

Fuel Pool Systems Modified

Repository Opening Date 1/1/2012

Unit 1 Shut Down Date 12/21/2033

Dollars in Thousands

No	Item Description	Labor	Equipment	Waste	Other	Subtotal	Contingency	Total
C. Greenfield	Subtotal	\$15,366	\$3,057	\$558	\$125	\$19,106	\$2,805	\$21,911
Scenario No. 6	Total	\$372,508	\$45,189	\$55,528	\$76,819	\$550,044	\$87,382	\$637,426

APPENDIX E
ANNUAL CASH FLOW TABLES

Kewaunee Power Station Annual Cost By Account

ScenarioNo 1

Unit No: Unit 1

Dollars in Thousands

Year	License Termination	Spent Fuel	Greenfield	Contingency	Total
2013	\$1,247	\$419	\$0	\$233	\$1,899
2014	\$41,377	\$13,888	\$0	\$7,741	\$63,005
2015	\$43,500	\$13,334	\$0	\$8,343	\$65,176
2016	\$67,860	\$13,105	\$0	\$14,480	\$95,444
2017	\$59,961	\$13,105	\$0	\$14,250	\$87,316
2018	\$33,625	\$13,105	\$0	\$8,551	\$55,281
2019	\$6,257	\$13,105	\$0	\$3,162	\$22,524
2020	\$6,950	\$12,914	\$0	\$3,235	\$23,099
2021	\$25,043	\$4,665	\$1,186	\$4,758	\$35,652
2022	\$0	\$4,665	\$10,555	\$2,291	\$17,511
2023	\$0	\$4,665	\$4,882	\$1,409	\$10,956
2024	\$0	\$4,665	\$0	\$667	\$5,333
2025	\$0	\$4,665	\$0	\$667	\$5,333
2026	\$0	\$4,665	\$0	\$667	\$5,333
2027	\$0	\$4,665	\$0	\$667	\$5,333
2028	\$0	\$4,665	\$0	\$667	\$5,333
2029	\$0	\$4,665	\$0	\$667	\$5,333
2030	\$0	\$4,665	\$0	\$667	\$5,333
2031	\$0	\$4,665	\$0	\$667	\$5,333
2032	\$0	\$4,665	\$0	\$667	\$5,333
2033	\$0	\$4,665	\$0	\$667	\$5,333
2034	\$0	\$4,665	\$0	\$667	\$5,333
2035	\$0	\$4,665	\$0	\$667	\$5,333
2036	\$0	\$4,665	\$0	\$667	\$5,333
2037	\$0	\$4,665	\$0	\$667	\$5,333
2038	\$0	\$4,665	\$0	\$667	\$5,333
2039	\$0	\$4,665	\$0	\$667	\$5,333
2040	\$0	\$4,665	\$0	\$667	\$5,333
2041	\$0	\$4,665	\$0	\$667	\$5,333
2042	\$0	\$4,665	\$0	\$667	\$5,333
2043	\$0	\$5,218	\$0	\$768	\$5,985
Total	\$285,820	\$200,825	\$16,622	\$81,902	\$585,169

Kewaunee Power Station Annual Cost By Account

ScenarioNo 2

Unit No: Unit 1

Dollars in Thousands

Year	License Termination	Spent Fuel	Greenfield	Contingency	Total
2013	\$1,247	\$419	\$0	\$233	\$1,899
2014	\$41,377	\$13,888	\$0	\$7,741	\$63,005
2015	\$43,500	\$14,978	\$0	\$8,721	\$67,199
2016	\$67,860	\$15,305	\$0	\$14,985	\$98,150
2017	\$59,961	\$15,305	\$0	\$14,756	\$90,022
2018	\$33,625	\$15,305	\$0	\$9,057	\$57,987
2019	\$6,257	\$15,305	\$0	\$3,668	\$25,230
2020	\$6,950	\$15,057	\$0	\$3,728	\$25,736
2021	\$25,043	\$4,637	\$1,186	\$4,754	\$35,620
2022	\$0	\$4,637	\$10,555	\$2,287	\$17,479
2023	\$0	\$4,637	\$4,882	\$1,405	\$10,924
2024	\$0	\$4,637	\$0	\$663	\$5,301
2025	\$0	\$4,637	\$0	\$663	\$5,301
2026	\$0	\$4,637	\$0	\$663	\$5,301
2027	\$0	\$4,637	\$0	\$663	\$5,301
2028	\$0	\$4,637	\$0	\$663	\$5,301
2029	\$0	\$4,637	\$0	\$663	\$5,301
2030	\$0	\$4,637	\$0	\$663	\$5,301
2031	\$0	\$4,637	\$0	\$663	\$5,301
2032	\$0	\$4,637	\$0	\$663	\$5,301
2033	\$0	\$4,637	\$0	\$663	\$5,301
2034	\$0	\$4,637	\$0	\$663	\$5,301
2035	\$0	\$4,637	\$0	\$663	\$5,301
2036	\$0	\$4,637	\$0	\$663	\$5,301
2037	\$0	\$4,637	\$0	\$663	\$5,301
2038	\$0	\$4,637	\$0	\$663	\$5,301
2039	\$0	\$4,637	\$0	\$663	\$5,301
2040	\$0	\$4,637	\$0	\$663	\$5,301
2041	\$0	\$4,637	\$0	\$663	\$5,301
2042	\$0	\$4,637	\$0	\$663	\$5,301
2043	\$0	\$4,637	\$0	\$663	\$5,301
2044	\$0	\$4,637	\$0	\$663	\$5,301
2045	\$0	\$4,637	\$0	\$663	\$5,301
2046	\$0	\$4,637	\$0	\$663	\$5,301
2047	\$0	\$4,637	\$0	\$663	\$5,301
2048	\$0	\$5,572	\$0	\$821	\$6,393
Total	\$285,820	\$236,347	\$16,622	\$88,080	\$626,869

Kewaunee Power Station Annual Cost By Account

ScenarioNo 3

Unit No: Unit 1

Dollars in Thousands

Year	License Termination	Spent Fuel	Greenfield	Contingency	Total
2033	\$1,247	\$419	\$0	\$233	\$1,899
2034	\$41,377	\$13,888	\$0	\$7,741	\$63,005
2035	\$43,500	\$12,375	\$0	\$8,122	\$63,996
2036	\$67,860	\$11,822	\$0	\$14,184	\$93,866
2037	\$59,961	\$11,822	\$0	\$13,955	\$85,738
2038	\$33,625	\$11,822	\$0	\$8,256	\$53,702
2039	\$6,257	\$11,822	\$0	\$2,867	\$20,946
2040	\$6,950	\$11,664	\$0	\$2,948	\$21,562
2041	\$25,043	\$4,698	\$1,186	\$4,763	\$35,689
2042	\$0	\$4,698	\$10,555	\$2,296	\$17,549
2043	\$0	\$4,698	\$4,882	\$1,414	\$10,994
2044	\$0	\$4,698	\$0	\$672	\$5,370
2045	\$0	\$4,698	\$0	\$672	\$5,370
2046	\$0	\$4,698	\$0	\$672	\$5,370
2047	\$0	\$4,698	\$0	\$672	\$5,370
2048	\$0	\$4,698	\$0	\$672	\$5,370
2049	\$0	\$4,698	\$0	\$672	\$5,370
2050	\$0	\$4,698	\$0	\$672	\$5,370
2051	\$0	\$4,698	\$0	\$672	\$5,370
2052	\$0	\$4,698	\$0	\$672	\$5,370
2053	\$0	\$4,698	\$0	\$672	\$5,370
2054	\$0	\$4,698	\$0	\$672	\$5,370
2055	\$0	\$4,698	\$0	\$672	\$5,370
2056	\$0	\$4,698	\$0	\$672	\$5,370
2057	\$0	\$4,698	\$0	\$672	\$5,370
2058	\$0	\$4,698	\$0	\$672	\$5,370
2059	\$0	\$5,023	\$0	\$741	\$5,764
Total	\$285,820	\$175,218	\$16,622	\$77,606	\$555,266

Kewaunee Power Station Annual Cost By Account

ScenarioNo 4

Unit No: Unit 1

Dollars in Thousands

Year	License Termination	Spent Fuel	Greenfield	Contingency	Total
2033	\$1,247	\$419	\$0	\$233	\$1,899
2034	\$41,377	\$13,888	\$0	\$7,741	\$63,005
2035	\$43,500	\$12,786	\$0	\$8,217	\$64,502
2036	\$67,860	\$12,372	\$0	\$14,311	\$94,542
2037	\$59,961	\$12,372	\$0	\$14,081	\$86,414
2038	\$33,625	\$12,372	\$0	\$8,382	\$54,379
2039	\$6,257	\$12,372	\$0	\$2,994	\$21,623
2040	\$6,950	\$12,199	\$0	\$3,071	\$22,220
2041	\$25,043	\$4,658	\$1,186	\$4,757	\$35,644
2042	\$0	\$4,658	\$10,555	\$2,290	\$17,503
2043	\$0	\$4,658	\$4,882	\$1,408	\$10,948
2044	\$0	\$4,658	\$0	\$667	\$5,325
2045	\$0	\$4,658	\$0	\$667	\$5,325
2046	\$0	\$4,658	\$0	\$667	\$5,325
2047	\$0	\$4,658	\$0	\$667	\$5,325
2048	\$0	\$4,658	\$0	\$667	\$5,325
2049	\$0	\$4,658	\$0	\$667	\$5,325
2050	\$0	\$4,658	\$0	\$667	\$5,325
2051	\$0	\$4,658	\$0	\$667	\$5,325
2052	\$0	\$4,658	\$0	\$667	\$5,325
2053	\$0	\$4,658	\$0	\$667	\$5,325
2054	\$0	\$4,658	\$0	\$667	\$5,325
2055	\$0	\$4,658	\$0	\$667	\$5,325
2056	\$0	\$4,658	\$0	\$667	\$5,325
2057	\$0	\$4,658	\$0	\$667	\$5,325
2058	\$0	\$4,658	\$0	\$667	\$5,325
2059	\$0	\$4,658	\$0	\$667	\$5,325
2060	\$0	\$4,658	\$0	\$667	\$5,325
2061	\$0	\$4,658	\$0	\$667	\$5,325
2062	\$0	\$4,658	\$0	\$667	\$5,325
2063	\$0	\$4,658	\$0	\$667	\$5,325
2064	\$0	\$5,202	\$0	\$767	\$5,969
Total	\$285,820	\$201,123	\$16,622	\$81,582	\$585,147

Kewaunee Power Station Annual Cost By Account

ScenarioNo 5

Unit No: Unit 1

Dollars in Thousands

Year	License Termination	Spent Fuel	Greenfield	Contingency	Total
2013	\$1,668	\$483	\$0	\$304	\$2,456
2014	\$55,357	\$16,028	\$0	\$10,096	\$81,481
2015	\$57,370	\$15,483	\$0	\$10,673	\$83,526
2016	\$76,961	\$15,251	\$0	\$15,945	\$108,157
2017	\$67,007	\$15,251	\$0	\$15,411	\$97,670
2018	\$32,745	\$15,251	\$0	\$8,633	\$56,629
2019	\$3,115	\$15,251	\$0	\$3,001	\$21,368
2020	\$3,926	\$15,036	\$0	\$3,085	\$22,047
2021	\$26,238	\$5,663	\$1,721	\$5,059	\$38,681
2022	\$0	\$5,663	\$15,319	\$3,055	\$24,036
2023	\$0	\$5,663	\$2,067	\$1,114	\$8,844
2024	\$0	\$5,663	\$0	\$808	\$6,471
2025	\$0	\$5,663	\$0	\$808	\$6,471
2026	\$0	\$5,663	\$0	\$808	\$6,471
2027	\$0	\$5,663	\$0	\$808	\$6,471
2028	\$0	\$5,663	\$0	\$808	\$6,471
2029	\$0	\$5,663	\$0	\$808	\$6,471
2030	\$0	\$5,663	\$0	\$808	\$6,471
2031	\$0	\$5,663	\$0	\$808	\$6,471
2032	\$0	\$5,663	\$0	\$808	\$6,471
2033	\$0	\$5,663	\$0	\$808	\$6,471
2034	\$0	\$5,663	\$0	\$808	\$6,471
2035	\$0	\$5,663	\$0	\$808	\$6,471
2036	\$0	\$5,663	\$0	\$808	\$6,471
2037	\$0	\$5,663	\$0	\$808	\$6,471
2038	\$0	\$5,663	\$0	\$808	\$6,471
2039	\$0	\$5,663	\$0	\$808	\$6,471
2040	\$0	\$5,663	\$0	\$808	\$6,471
2041	\$0	\$5,663	\$0	\$808	\$6,471
2042	\$0	\$5,663	\$0	\$808	\$6,471
2043	\$0	\$4,011	\$0	\$582	\$4,594
Total	\$324,388	\$236,632	\$19,106	\$92,314	\$672,440

Kewaunee Power Station Annual Cost By Account

ScenarioNo 6

Unit No: Unit 1

Dollars in Thousands

Year	License Termination	Spent Fuel	Greenfield	Contingency	Total
2033	\$1,668	\$483	\$0	\$304	\$2,456
2034	\$55,357	\$16,028	\$0	\$10,096	\$81,481
2035	\$57,370	\$14,524	\$0	\$10,452	\$82,346
2036	\$76,961	\$13,968	\$0	\$15,650	\$106,579
2037	\$67,007	\$13,968	\$0	\$15,116	\$96,091
2038	\$32,745	\$13,968	\$0	\$8,338	\$55,051
2039	\$3,115	\$13,968	\$0	\$2,706	\$19,789
2040	\$3,926	\$13,785	\$0	\$2,798	\$20,509
2041	\$26,238	\$5,670	\$1,721	\$5,060	\$38,689
2042	\$0	\$5,670	\$15,319	\$3,056	\$24,044
2043	\$0	\$5,670	\$2,067	\$1,116	\$8,852
2044	\$0	\$5,670	\$0	\$809	\$6,479
2045	\$0	\$5,670	\$0	\$809	\$6,479
2046	\$0	\$5,670	\$0	\$809	\$6,479
2047	\$0	\$5,670	\$0	\$809	\$6,479
2048	\$0	\$5,670	\$0	\$809	\$6,479
2049	\$0	\$5,670	\$0	\$809	\$6,479
2050	\$0	\$5,670	\$0	\$809	\$6,479
2051	\$0	\$5,670	\$0	\$809	\$6,479
2052	\$0	\$5,670	\$0	\$809	\$6,479
2053	\$0	\$5,670	\$0	\$809	\$6,479
2054	\$0	\$5,670	\$0	\$809	\$6,479
2055	\$0	\$5,670	\$0	\$809	\$6,479
2056	\$0	\$5,670	\$0	\$809	\$6,479
2057	\$0	\$5,670	\$0	\$809	\$6,479
2058	\$0	\$5,670	\$0	\$809	\$6,479
2059	\$0	\$3,805	\$0	\$552	\$4,356
Total	\$324,388	\$206,550	\$19,106	\$87,382	\$637,426

APPENDIX F
DETAILED ANNUAL CASH FLOW TABLES

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Scenario No 1							
Unit No. Unit 1							
Cost Account A. License Termination							
2013	\$1,079.04	\$14.25	\$0.00	\$153.68	\$1,246.97	\$173.76	\$1,420.72
2014	\$35,804.42	\$472.83	\$0.00	\$5,099.37	\$41,376.62	\$5,765.58	\$47,142.21
2015	\$36,419.79	\$1,701.06	\$257.64	\$5,121.36	\$43,499.85	\$6,160.68	\$49,660.52
2016	\$35,828.76	\$12,371.42	\$14,523.00	\$5,136.35	\$67,859.54	\$12,233.71	\$80,093.26
2017	\$27,813.77	\$4,200.39	\$22,950.10	\$4,997.10	\$59,961.35	\$12,003.95	\$71,965.30
2018	\$14,892.33	\$1,529.00	\$14,658.26	\$2,545.42	\$33,625.01	\$6,304.87	\$39,929.87
2019	\$5,082.60	\$53.18	\$0.00	\$1,121.19	\$6,256.97	\$916.53	\$7,173.50
2020	\$5,562.97	\$136.36	\$75.00	\$1,175.98	\$6,950.31	\$1,026.19	\$7,976.50
2021	\$17,895.31	\$2,496.50	\$2,216.00	\$2,435.57	\$25,043.38	\$3,907.74	\$28,951.12
Account Subtotal	\$180,379.00	\$22,975.00	\$54,680.00	\$27,786.00	\$285,820.00	\$48,493.00	\$334,313.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account B. Spent Fuel							
2013	\$244.65	\$89.99	\$0.00	\$83.90	\$418.54	\$59.53	\$478.07
2014	\$8,117.94	\$2,986.15	\$0.00	\$2,783.81	\$13,887.90	\$1,975.20	\$15,863.10
2015	\$6,712.54	\$3,574.45	\$0.00	\$3,046.78	\$13,333.77	\$2,181.89	\$15,515.67
2016	\$6,213.44	\$3,764.35	\$0.00	\$3,127.34	\$13,105.14	\$2,245.85	\$15,350.99
2017	\$6,213.44	\$3,764.35	\$0.00	\$3,127.34	\$13,105.14	\$2,245.85	\$15,350.99
2018	\$6,213.44	\$3,764.35	\$0.00	\$3,127.34	\$13,105.14	\$2,245.85	\$15,350.99
2019	\$6,213.44	\$3,764.35	\$0.00	\$3,127.34	\$13,105.14	\$2,245.85	\$15,350.99
2020	\$6,150.23	\$3,670.65	\$0.00	\$3,092.87	\$12,913.75	\$2,209.08	\$15,122.83
2021	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2022	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2023	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2024	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2025	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2026	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2027	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2028	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2029	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2030	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2031	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2032	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2033	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2034	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
2035	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2036	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2037	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2038	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2039	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2040	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2041	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2042	\$3,125.90	\$54.15	\$0.00	\$1,485.08	\$4,665.13	\$667.46	\$5,332.59
2043	\$3,935.08	\$362.13	\$367.00	\$553.54	\$5,217.74	\$767.75	\$5,985.49
Account Subtotal	\$118,784.00	\$26,932.00	\$367.00	\$54,742.00	\$200,825.00	\$30,861.00	\$231,686.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account C. Greenfield							
2021	\$847.56	\$272.59	\$54.34	\$11.10	\$1,185.59	\$182.41	\$1,368.00
2022	\$7,545.36	\$2,426.69	\$483.78	\$98.84	\$10,554.66	\$1,623.86	\$12,178.52
2023	\$4,489.08	\$357.73	\$19.88	\$15.06	\$4,881.75	\$741.73	\$5,623.49
Account Subtotal	\$12,882.00	\$3,057.00	\$558.00	\$125.00	\$16,622.00	\$2,548.00	\$19,170.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Unit Subtotal	\$312,045.00	\$52,964.00	\$55,605.00	\$82,653.00	\$503,267.00	\$81,902.00	\$585,169.00
Scenario Total	\$312,045.00	\$52,964.00	\$55,605.00	\$82,653.00	\$503,267.00	\$81,902.00	\$585,169.00
Scenario No 2							
Unit No. Unit 1							
Cost Account A. License Termination							
2013	\$1,079.04	\$14.25	\$0.00	\$153.68	\$1,246.97	\$173.76	\$1,420.72
2014	\$35,804.42	\$472.83	\$0.00	\$5,099.37	\$41,376.62	\$5,765.58	\$47,142.21
2015	\$36,419.79	\$1,701.06	\$257.64	\$5,121.36	\$43,499.85	\$6,160.68	\$49,660.52
2016	\$35,828.76	\$12,371.42	\$14,523.00	\$5,136.35	\$67,859.54	\$12,233.71	\$80,093.26
2017	\$27,813.77	\$4,200.39	\$22,950.10	\$4,997.10	\$59,961.35	\$12,003.95	\$71,965.30
2018	\$14,892.33	\$1,529.00	\$14,658.26	\$2,545.42	\$33,625.01	\$6,304.87	\$39,929.87
2019	\$5,082.60	\$53.18	\$0.00	\$1,121.19	\$6,256.97	\$916.53	\$7,173.50
2020	\$5,562.97	\$136.36	\$75.00	\$1,175.98	\$6,950.31	\$1,026.19	\$7,976.50
2021	\$17,895.31	\$2,496.50	\$2,216.00	\$2,435.57	\$25,043.38	\$3,907.74	\$28,951.12
Account Subtotal	\$180,379.00	\$22,975.00	\$54,680.00	\$27,786.00	\$285,820.00	\$48,493.00	\$334,313.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account B. Spent Fuel							
2013	\$244.65	\$89.99	\$0.00	\$83.90	\$418.54	\$59.53	\$478.07
2014	\$8,117.94	\$2,986.15	\$0.00	\$2,783.81	\$13,887.90	\$1,975.20	\$15,863.10
2015	\$6,712.54	\$5,218.85	\$0.00	\$3,046.78	\$14,978.18	\$2,560.04	\$17,538.22
2016	\$6,213.44	\$5,964.41	\$0.00	\$3,127.34	\$15,305.20	\$2,751.78	\$18,056.98
2017	\$6,213.44	\$5,964.41	\$0.00	\$3,127.34	\$15,305.20	\$2,751.78	\$18,056.98
2018	\$6,213.44	\$5,964.41	\$0.00	\$3,127.34	\$15,305.20	\$2,751.78	\$18,056.98
2019	\$6,213.44	\$5,964.41	\$0.00	\$3,127.34	\$15,305.20	\$2,751.78	\$18,056.98
2020	\$6,149.55	\$5,814.99	\$0.00	\$3,092.72	\$15,057.27	\$2,702.08	\$17,759.34
2021	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2022	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2023	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2024	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2025	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2026	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2027	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2028	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2029	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2030	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2031	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2032	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2033	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2034	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
2035	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2036	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2037	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2038	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2039	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2040	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2041	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2042	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2043	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2044	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2045	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2046	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2047	\$3,103.28	\$54.08	\$0.00	\$1,480.13	\$4,637.49	\$663.47	\$5,300.96
2048	\$4,094.11	\$427.10	\$499.00	\$551.80	\$5,572.01	\$821.34	\$6,393.35
Account Subtotal	\$133,961.00	\$39,855.00	\$499.00	\$62,032.00	\$236,347.00	\$37,039.00	\$273,386.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account C. Greenfield							
2021	\$847.56	\$272.59	\$54.34	\$11.10	\$1,185.59	\$182.41	\$1,368.00
2022	\$7,545.36	\$2,426.69	\$483.78	\$98.84	\$10,554.66	\$1,623.86	\$12,178.52
2023	\$4,489.08	\$357.73	\$19.88	\$15.06	\$4,881.75	\$741.73	\$5,623.49
Account Subtotal	\$12,882.00	\$3,057.00	\$558.00	\$125.00	\$16,622.00	\$2,548.00	\$19,170.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Unit Subtotal	\$327,222.00	\$65,887.00	\$55,737.00	\$89,943.00	\$538,789.00	\$88,080.00	\$626,869.00
Scenario Total	\$327,222.00	\$65,887.00	\$55,737.00	\$89,943.00	\$538,789.00	\$88,080.00	\$626,869.00
Scenario No 3							
Unit No. Unit 1							
Cost Account A, License Termination							
2033	\$1,079.04	\$14.25	\$0.00	\$153.68	\$1,246.97	\$173.76	\$1,420.72
2034	\$35,804.42	\$472.83	\$0.00	\$5,099.37	\$41,376.62	\$5,765.58	\$47,142.21
2035	\$36,419.79	\$1,701.06	\$257.64	\$5,121.36	\$43,499.85	\$6,160.68	\$49,660.52
2036	\$35,828.76	\$12,371.42	\$14,523.00	\$5,136.35	\$67,859.54	\$12,233.71	\$80,093.26
2037	\$27,813.77	\$4,200.39	\$22,950.10	\$4,997.10	\$59,961.35	\$12,003.95	\$71,965.30
2038	\$14,892.33	\$1,529.00	\$14,658.26	\$2,545.42	\$33,625.01	\$6,304.87	\$39,929.87
2039	\$5,082.60	\$53.18	\$0.00	\$1,121.19	\$6,256.97	\$916.53	\$7,173.50
2040	\$5,562.97	\$136.36	\$75.00	\$1,175.98	\$6,950.31	\$1,026.19	\$7,976.50
2041	\$17,895.31	\$2,496.50	\$2,216.00	\$2,435.57	\$25,043.38	\$3,907.74	\$28,951.12
Account Subtotal	\$180,379.00	\$22,975.00	\$54,680.00	\$27,786.00	\$285,820.00	\$48,493.00	\$334,313.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account B. Spent Fuel							
2033	\$244.65	\$89.99	\$0.00	\$83.90	\$418.54	\$59.53	\$478.07
2034	\$8,117.94	\$2,986.15	\$0.00	\$2,783.81	\$13,887.90	\$1,975.20	\$15,863.10
2035	\$6,712.54	\$2,615.30	\$0.00	\$3,046.78	\$12,374.62	\$1,961.27	\$14,335.89
2036	\$6,213.44	\$2,481.08	\$0.00	\$3,127.34	\$11,821.87	\$1,950.68	\$13,772.55
2037	\$6,213.44	\$2,481.08	\$0.00	\$3,127.34	\$11,821.87	\$1,950.68	\$13,772.55
2038	\$6,213.44	\$2,481.08	\$0.00	\$3,127.34	\$11,821.87	\$1,950.68	\$13,772.55
2039	\$6,213.44	\$2,481.08	\$0.00	\$3,127.34	\$11,821.87	\$1,950.68	\$13,772.55
2040	\$6,151.05	\$2,419.88	\$0.00	\$3,093.05	\$11,663.97	\$1,921.53	\$13,585.50
2041	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2042	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2043	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2044	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2045	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2046	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2047	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2048	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2049	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2050	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2051	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2052	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2053	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2054	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
2055	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2056	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2057	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2058	\$3,152.80	\$54.23	\$0.00	\$1,490.86	\$4,697.90	\$672.46	\$5,370.36
2059	\$3,852.60	\$325.16	\$290.00	\$555.59	\$5,023.34	\$740.52	\$5,763.86
Account Subtotal	\$106,683.00	\$19,337.00	\$290.00	\$48,908.00	\$175,218.00	\$26,565.00	\$201,783.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account C. Greenfield							
2041	\$847.56	\$272.59	\$54.34	\$11.10	\$1,185.59	\$182.41	\$1,368.00
2042	\$7,545.36	\$2,426.69	\$483.78	\$98.84	\$10,554.66	\$1,623.86	\$12,178.52
2043	\$4,489.08	\$357.73	\$19.88	\$15.06	\$4,881.75	\$741.73	\$5,623.49
Account Subtotal	\$12,882.00	\$3,057.00	\$558.00	\$125.00	\$16,622.00	\$2,548.00	\$19,170.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Unit Subtotal	\$299,944.00	\$45,369.00	\$55,528.00	\$76,819.00	\$477,660.00	\$77,606.00	\$555,266.00
Scenario Total	\$299,944.00	\$45,369.00	\$55,528.00	\$76,819.00	\$477,660.00	\$77,606.00	\$555,266.00
Scenario No 4							
Unit No. Unit 1							
Cost Account A. License Termination							
2033	\$1,079.04	\$14.25	\$0.00	\$153.68	\$1,246.97	\$173.76	\$1,420.72
2034	\$35,804.42	\$472.83	\$0.00	\$5,099.37	\$41,376.62	\$5,765.58	\$47,142.21
2035	\$36,419.79	\$1,701.06	\$257.64	\$5,121.36	\$43,499.85	\$6,160.68	\$49,660.52
2036	\$35,828.76	\$12,371.42	\$14,523.00	\$5,136.35	\$67,859.54	\$12,233.71	\$80,093.26
2037	\$27,813.77	\$4,200.39	\$22,950.10	\$4,997.10	\$59,961.35	\$12,003.95	\$71,965.30
2038	\$14,892.33	\$1,529.00	\$14,658.26	\$2,545.42	\$33,625.01	\$6,304.87	\$39,929.87
2039	\$5,082.60	\$53.18	\$0.00	\$1,121.19	\$6,256.97	\$916.53	\$7,173.50
2040	\$5,562.97	\$136.36	\$75.00	\$1,175.98	\$6,950.31	\$1,026.19	\$7,976.50
2041	\$17,895.31	\$2,496.50	\$2,216.00	\$2,435.57	\$25,043.38	\$3,907.74	\$28,951.12
Account Subtotal	\$180,379.00	\$22,975.00	\$54,680.00	\$27,786.00	\$285,820.00	\$48,493.00	\$334,313.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account B. Spent Fuel							
2033	\$244.65	\$89.99	\$0.00	\$83.90	\$418.54	\$59.53	\$478.07
2034	\$8,117.94	\$2,986.15	\$0.00	\$2,783.81	\$13,887.90	\$1,975.20	\$15,863.10
2035	\$6,712.54	\$3,026.36	\$0.00	\$3,046.78	\$12,785.68	\$2,055.84	\$14,841.53
2036	\$6,213.44	\$3,031.05	\$0.00	\$3,127.34	\$12,371.84	\$2,077.21	\$14,449.05
2037	\$6,213.44	\$3,031.05	\$0.00	\$3,127.34	\$12,371.84	\$2,077.21	\$14,449.05
2038	\$6,213.44	\$3,031.05	\$0.00	\$3,127.34	\$12,371.84	\$2,077.21	\$14,449.05
2039	\$6,213.44	\$3,031.05	\$0.00	\$3,127.34	\$12,371.84	\$2,077.21	\$14,449.05
2040	\$6,150.07	\$2,955.92	\$0.00	\$3,092.84	\$12,198.83	\$2,044.68	\$14,243.50
2041	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2042	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2043	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2044	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2045	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2046	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2047	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2048	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2049	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2050	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2051	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2052	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2053	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2054	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
2055	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2056	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2057	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2058	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2059	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2060	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2061	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2062	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2063	\$3,120.40	\$54.09	\$0.00	\$1,483.87	\$4,658.37	\$666.51	\$5,324.88
2064	\$3,931.72	\$357.25	\$356.00	\$557.19	\$5,202.16	\$767.25	\$5,969.40
Account Subtotal	\$121,780.00	\$22,784.00	\$356.00	\$56,203.00	\$201,123.00	\$30,541.00	\$231,664.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account C. Greenfield							
2041	\$847.56	\$272.59	\$54.34	\$11.10	\$1,185.59	\$182.41	\$1,368.00
2042	\$7,545.36	\$2,426.69	\$483.78	\$98.84	\$10,554.66	\$1,623.86	\$12,178.52
2043	\$4,489.08	\$357.73	\$19.88	\$15.06	\$4,881.75	\$741.73	\$5,623.49
Account Subtotal	\$12,882.00	\$3,057.00	\$558.00	\$125.00	\$16,622.00	\$2,548.00	\$19,170.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Unit Subtotal	\$315,041.00	\$48,816.00	\$55,594.00	\$84,114.00	\$503,565.00	\$81,582.00	\$585,147.00
Scenario Total	\$315,041.00	\$48,816.00	\$55,594.00	\$84,114.00	\$503,565.00	\$81,582.00	\$585,147.00
Scenario No 5							
Unit No. Unit 1							
Cost Account A. License Termination							
2013	\$1,503.00	\$11.61	\$0.00	\$153.68	\$1,668.29	\$235.18	\$1,903.47
2014	\$49,872.36	\$385.25	\$0.00	\$5,099.37	\$55,356.98	\$7,803.71	\$63,160.69
2015	\$50,369.76	\$1,621.38	\$257.64	\$5,121.36	\$57,370.13	\$8,172.89	\$65,543.03
2016	\$44,895.69	\$12,405.72	\$14,523.00	\$5,136.35	\$76,960.77	\$13,381.54	\$90,342.31
2017	\$34,842.43	\$4,217.71	\$22,950.10	\$4,997.10	\$67,007.33	\$12,847.49	\$79,854.82
2018	\$14,014.59	\$1,527.06	\$14,658.26	\$2,545.42	\$32,745.32	\$6,069.15	\$38,814.47
2019	\$1,962.78	\$31.02	\$0.00	\$1,121.19	\$3,114.99	\$437.92	\$3,552.91
2020	\$2,560.63	\$114.62	\$75.00	\$1,175.98	\$3,926.23	\$562.46	\$4,488.70
2021	\$19,093.75	\$2,492.63	\$2,216.00	\$2,435.57	\$26,237.95	\$3,998.66	\$30,236.61
Account Subtotal	\$219,115.00	\$22,807.00	\$54,680.00	\$27,786.00	\$324,388.00	\$53,509.00	\$377,897.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account B. Spent Fuel							
2013	\$309.15	\$89.99	\$0.00	\$83.90	\$483.04	\$69.07	\$552.11
2014	\$10,258.13	\$2,986.15	\$0.00	\$2,783.81	\$16,028.09	\$2,291.95	\$18,320.04
2015	\$8,861.89	\$3,574.45	\$0.00	\$3,046.78	\$15,483.12	\$2,500.07	\$17,983.19
2016	\$8,359.51	\$3,764.35	\$0.00	\$3,127.34	\$15,251.20	\$2,563.57	\$17,814.76
2017	\$8,359.51	\$3,764.35	\$0.00	\$3,127.34	\$15,251.20	\$2,563.57	\$17,814.76
2018	\$8,359.51	\$3,764.35	\$0.00	\$3,127.34	\$15,251.20	\$2,563.57	\$17,814.76
2019	\$8,359.51	\$3,764.35	\$0.00	\$3,127.34	\$15,251.20	\$2,563.57	\$17,814.76
2020	\$8,272.00	\$3,670.65	\$0.00	\$3,092.87	\$15,035.52	\$2,522.98	\$17,558.50
2021	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2022	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2023	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2024	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2025	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2026	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2027	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2028	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2029	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2030	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2031	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2032	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2033	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2034	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
2035	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2036	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2037	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2038	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2039	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2040	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2041	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2042	\$4,123.78	\$54.15	\$0.00	\$1,485.08	\$5,663.01	\$808.15	\$6,471.16
2043	\$2,740.54	\$350.13	\$367.00	\$553.54	\$4,011.20	\$582.44	\$4,593.64
Account Subtotal	\$154,603.00	\$26,920.00	\$367.00	\$54,742.00	\$236,632.00	\$36,000.00	\$272,632.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account C. Greenfield							
2021	\$1,382.70	\$272.59	\$54.34	\$11.10	\$1,720.73	\$252.33	\$1,973.06
2022	\$12,309.43	\$2,426.69	\$483.78	\$98.84	\$15,318.73	\$2,246.35	\$17,565.08
2023	\$1,673.87	\$357.73	\$19.88	\$15.06	\$2,066.54	\$306.32	\$2,372.85
Account Subtotal	\$15,366.00	\$3,057.00	\$558.00	\$125.00	\$19,106.00	\$2,805.00	\$21,911.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Unit Subtotal	\$389,084.00	\$52,784.00	\$55,605.00	\$82,653.00	\$580,126.00	\$92,314.00	\$672,440.00
Scenario Total	\$389,084.00	\$52,784.00	\$55,605.00	\$82,653.00	\$580,126.00	\$92,314.00	\$672,440.00
Scenario No 6							
Unit No. Unit 1							
Cost Account A. License Termination							
2033	\$1,503.00	\$11.61	\$0.00	\$153.68	\$1,668.29	\$235.18	\$1,903.47
2034	\$49,872.36	\$385.25	\$0.00	\$5,099.37	\$55,356.98	\$7,803.71	\$63,160.69
2035	\$50,369.76	\$1,621.38	\$257.64	\$5,121.36	\$57,370.13	\$8,172.89	\$65,543.03
2036	\$44,895.69	\$12,405.72	\$14,523.00	\$5,136.35	\$76,960.77	\$13,381.54	\$90,342.31
2037	\$34,842.43	\$4,217.71	\$22,950.10	\$4,997.10	\$67,007.33	\$12,847.49	\$79,854.82
2038	\$14,014.59	\$1,527.06	\$14,658.26	\$2,545.42	\$32,745.32	\$6,069.15	\$38,814.47
2039	\$1,962.78	\$31.02	\$0.00	\$1,121.19	\$3,114.99	\$437.92	\$3,552.91
2040	\$2,560.63	\$114.62	\$75.00	\$1,175.98	\$3,926.23	\$562.46	\$4,488.70
2041	\$19,093.75	\$2,492.63	\$2,216.00	\$2,435.57	\$26,237.95	\$3,998.66	\$30,236.61
Account Subtotal	\$219,115.00	\$22,807.00	\$54,680.00	\$27,786.00	\$324,388.00	\$53,509.00	\$377,897.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account B. Spent Fuel							
2033	\$309.15	\$89.99	\$0.00	\$83.90	\$483.04	\$69.07	\$552.11
2034	\$10,258.13	\$2,986.15	\$0.00	\$2,783.81	\$16,028.09	\$2,291.95	\$18,320.04
2035	\$8,861.89	\$2,615.30	\$0.00	\$3,046.78	\$14,523.96	\$2,279.45	\$16,803.41
2036	\$8,359.51	\$2,481.08	\$0.00	\$3,127.34	\$13,967.93	\$2,268.39	\$16,236.32
2037	\$8,359.51	\$2,481.08	\$0.00	\$3,127.34	\$13,967.93	\$2,268.39	\$16,236.32
2038	\$8,359.51	\$2,481.08	\$0.00	\$3,127.34	\$13,967.93	\$2,268.39	\$16,236.32
2039	\$8,359.51	\$2,481.08	\$0.00	\$3,127.34	\$13,967.93	\$2,268.39	\$16,236.32
2040	\$8,272.03	\$2,419.88	\$0.00	\$3,093.05	\$13,784.95	\$2,235.32	\$16,020.27
2041	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2042	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2043	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2044	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2045	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2046	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2047	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2048	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2049	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2050	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2051	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2052	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2053	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2054	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
2055	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2056	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2057	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2058	\$4,124.55	\$54.23	\$0.00	\$1,490.86	\$5,669.65	\$809.27	\$6,478.91
2059	\$2,645.83	\$313.16	\$290.00	\$555.59	\$3,804.57	\$551.84	\$4,356.41
Account Subtotal	\$138,027.00	\$19,325.00	\$290.00	\$48,908.00	\$206,550.00	\$31,068.00	\$237,618.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Cost Account C. Greenfield							
2041	\$1,382.70	\$272.59	\$54.34	\$11.10	\$1,720.73	\$252.33	\$1,973.06
2042	\$12,309.43	\$2,426.69	\$483.78	\$98.84	\$15,318.73	\$2,246.35	\$17,565.08
2043	\$1,673.87	\$357.73	\$19.88	\$15.06	\$2,066.54	\$306.32	\$2,372.85
Account Subtotal	\$15,366.00	\$3,057.00	\$558.00	\$125.00	\$19,106.00	\$2,805.00	\$21,911.00

Kewaunee Detailed Annual Cost

Dollars in Thousands

Year	Labor	Material and Equip	Waste	Other	Subtotal	Contingency	Total
Unit Subtotal	\$372,508.00	\$45,189.00	\$55,528.00	\$76,819.00	\$550,044.00	\$87,382.00	\$637,426.00
Scenario Total	\$372,508.00	\$45,189.00	\$55,528.00	\$76,819.00	\$550,044.00	\$87,382.00	\$637,426.00

Attachment 3

**DOMINION ENERGY KEWAUNEE RESPONSES TO NRC REQUEST FOR
ADDITIONAL INFORMATION CONCERNING PRELIMINARY DECOMMISSIONING
COST ESTIMATE AND IRRADIATED FUEL MANAGEMENT PLAN
(NON-PROPRIETARY VERSION)**

**KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.**

**DOMINION ENERGY KEWAUNEE RESPONSES TO NRC REQUEST FOR
ADDITIONAL INFORMATION CONCERNING PRELIMINARY DECOMMISSIONING
COST ESTIMATE AND IRRADIATED FUEL MANAGEMENT PLAN**

KPS Preliminary Decommissioning Cost Estimate (08-0702) (Reference 2)

RAI No. 1: Page 2

In this submittal, DEK applied a fund growth rate of 6.24 percent for the period from 2008-2013, and 5.233 percent growth rate for the period from 2014 to the end of the projected decommissioning period. For the entire period, DEK applied an escalation cost rate of 3.233 percent. DEK needs to provide a basis that supports using a real rate of return of greater than 2 percent for the period from 2008-2013.

DEK Response:

DEK obtained the 6.24 percent fund growth rate from an asset allocation study dated January 1, 2007, performed by Delaware Investments. This was done because DEK is not aware of any regulatory requirement limiting the real growth rate used in a site-specific analysis to 2 percent. This asset allocation study was developed specifically for Kewaunee Power Station (KPS) and uses inputs specific to KPS, such as the decommissioning study estimate amount, tax rates, trust fund balance, start date of decommissioning, portfolio investment instruments, and expected returns and investment instrument weightings. The study develops several alternative policies and associated aggregate returns by adjusting the weightings of the portfolio investment instruments. After the asset allocation study was completed, it was reviewed by the Dominion Treasury Department to determine which policy was the most realistic, based on a conservative portfolio that met NRC Trust Fund Investment guidelines.

To preclude the necessity of additional questions concerning the assumed growth rate of the trust fund, DEK wishes to amend the initial submittal by using a 2 percent real rate of return (RRoR) for the entire study period. The resulting 50.75(c) cash flow results are provided in Table 1.

In addition, a revised cash flow table reflecting the decommissioning trust fund value as of April 30, 2009, is provided in the response to RAI 5 below. Please refer to the response to RAI 5 which reflects this additional change.

Table 1

**Kewaunee - No License Renewal
Decommissioning Annual Cash Flow Analysis - License Termination 10 CFR 50.75(c)**

	Dates	Amounts	Notes
Current Value of QF as of	10/31/2008	\$ 380,681,436	
Current Value of NQF as of	10/31/2008	\$ -	
Guaranty Amount	10/31/2008	\$ -	
Total Fund Balances as of	10/31/2008	\$ 380,681,436	
Calculation Start Year	2008		Prorated for 10/31/2008
Projected Decom Funds value at Calc date	10/31/2008	\$ 380,681,436	
Projected Decom Study costs 50.75(c) at Calc date	10/31/2008	\$ 380,575,241	License Termination Costs
Start of Decom Expenditures Year	2013	(12/21/2013)	(12/21/2013)

5.253%	Fund Growth Rate	(2008 - 2013) - Revised "after-tax" growth rate for the Trust
3.253%	Cost Esc Rate	(2008 - 2013) - Site Spec Decom cost escalation rate
3.253%	Cost Esc Rate	(2013 - end of Decom) - Site Spec Decom cost escalation rate
5.253%	Fund Growth rate	(2014 - end of Decom) - "after-tax" Trust growth rate (assumes 2% Real Rate of Return)
5.253%	Discount Rate	(Based on Dominion Corporate Treasury Guidance)

KPS Annual Summary Cash Flow - 50.75(c) Radiological Portion (in future dollars)					
Year	Beg of Year Balance (Future \$)	Earnings (Future \$)	License Term Expenditures (Future \$)	End of Year Balance (Future \$)	License Term Expenditures (in 10/31/2008 \$)
10/31/2008	\$ 380,681,436	\$ 3,333,533	\$ -	\$ 384,014,969	\$ -
1/1/2009	\$ 384,014,969	\$ 20,172,306	\$ -	\$ 404,187,275	\$ -
1/1/2010	\$ 404,187,275	\$ 21,231,958	\$ -	\$ 425,419,232	\$ -
1/1/2011	\$ 425,419,232	\$ 22,347,272	\$ -	\$ 447,766,505	\$ -
1/1/2012	\$ 447,766,505	\$ 23,521,174	\$ -	\$ 471,287,679	\$ -
1/1/2013	\$ 471,287,679	\$ 24,707,503	\$ 1,874,697	\$ 494,120,485	\$ 1,597,395
1/1/2014	\$ 494,120,485	\$ 25,957,403	\$ 64,216,488	\$ 455,861,400	\$ 52,993,679
1/1/2015	\$ 455,861,400	\$ 23,947,556	\$ 70,224,410	\$ 409,584,547	\$ 56,125,713
1/1/2016	\$ 409,584,547	\$ 21,516,516	\$ 108,753,269	\$ 322,347,793	\$ 84,180,665
1/1/2017	\$ 322,347,793	\$ 16,933,748	\$ 94,106,447	\$ 245,175,094	\$ 70,548,155
1/1/2018	\$ 245,175,094	\$ 12,879,670	\$ 61,222,385	\$ 196,832,379	\$ 44,450,104
1/1/2019	\$ 196,832,379	\$ 10,340,104	\$ 11,661,102	\$ 195,511,382	\$ 8,199,708
1/1/2020	\$ 195,511,382	\$ 10,270,709	\$ 13,366,174	\$ 192,415,917	\$ 9,102,531
1/1/2021	\$ 192,415,917	\$ 10,108,097	\$ 49,038,897	\$ 153,485,117	\$ 32,343,871
1/1/2022	\$ 153,485,117	\$ 8,062,963	\$ -	\$ 161,548,079	\$ -
1/1/2023	\$ 161,548,079	\$ 8,486,531	\$ -	\$ 170,034,610	\$ -
1/1/2024	\$ 170,034,610	\$ 8,932,350	\$ -	\$ 178,966,960	\$ -
1/1/2025	\$ 178,966,960	\$ 9,401,589	\$ 19,865,605	\$ 168,502,943	\$ 11,527,579
1/1/2026	\$ 168,502,943	\$ 8,851,887	\$ 16,914,457	\$ 160,440,373	\$ 9,505,843
Completion in 2026 of 50.75(c) radiological portion of decommissioning					
50.75(c) Cost Estimate (in 10/31/2008 \$)					\$ 380,575,241
50.75(c) Cost Estimate (in Future \$)			\$ 511,243,931		
Remaining funds at end of 50.75(c) (Discounted to 2008 \$)				\$ 67,193,529	

RAI No. 2: Attachment, Page 6, Section 3.2 Escalation to 2008 Dollars

In the submittal, Dominion references a 2006 EnergySolutions site-specific cost estimate referred to as the "2006 Cost Study," and stated that the costs were escalated to 2008 dollars. However, the 2006 Cost Study was not included as part of the submittal. The 2006 Cost Study with its supporting basis constitutes part of Dominion's analyses, and needs to be submitted to substantiate Dominion's estimated decommissioning costs. The NRC staff will review the 2006 Cost Study to determine if the estimate and supporting assumptions are reasonable, and may issue additional RAIs on the 2006 Cost Study.

DEK Response:

The 2006 EnergySolutions site-specific cost estimate is provided in Attachment 2.

RAI No. 3: Page 6, Attachment, Section 3.2 Escalation to 2008 Dollars

This submittal escalates the \$334.3 million identified in the 2006 cost estimate in 2005 dollars to \$380.6 million in 2008 dollars based on the following escalation rates: 3.863 percent for the period from 2005 to 2006, 3.80 percent for the period from 2006 to 2007, and 3.814 percent for the period from 2007 to 2008. The formula amount calculated in Table 2 by DEK, as of December 31, 2007, is \$327.5 million. The formula amount calculated as of December 31, 2008, is \$360.4 million. Since the 2008 formula amount is based on NUREG-1307, Rev. 13, and represents an increase that is greater than 10 percent for the period 2007 to 2008, and the sum of DEK's escalation rates is approximately 13.0 percent for the entire period of 2005-2008, DEK's escalation rate is significantly lower than the escalation based on NUREG-1307, Rev. 13. DEK needs to provide more detail on what factors its escalation was based on.

DEK Response:

Table 2 shows the basis for the 2005 to 2008 Low Level Radioactive Waste (LLRW) escalation rates used in DEK's analysis. In general, DEK used Bureau of Labor Statistics (BLS) based indices for Equipment and Labor to arrive at the aggregate values shown. The site specific escalation rates for waste disposal incorporate proactive measures taken by DEK to mitigate the effects of inflation and uncertainty on the disposal cost of LLRW. The individual burial escalation rates shown by year reflect Barnwell's upper escalation cap of 5 percent through July 2007, when Barnwell ceased accepting non-compact Class 'A', 'B' & 'C' LLRW. [

] Commercially Sensitive

Separately, the apparent discrepancy in escalation rates noted above can be attributed in part to the period of observation being annualized and the waste burial cost adjustment. Specifically, since NUREG-1307 is not updated at precise annual intervals (i.e., NUREG-1307 was revised in March 2005, February 2007, and November 2008), the increases in the formula amount adjustment factor are not readily translated into annual escalation rates. However, to compare the formula amount with the site specific escalation rate, the same time period must be referenced. Considering the increase in the adjustment factor over the 44 month period between March 2005 and November 2008, the average annual escalation rate exceeds DEK's average annual escalation rate by only 1.42 percent.

Further, it should be noted that the waste burial cost adjustment factor in NUREG-1307 is calculated by comparing the 1986 and current costs of waste disposal assumed for the reference plants on which the NRC's minimum formula amounts are based. Thus,

the adjustment factor is not directly comparable to the escalation of waste disposal costs for a particular plant's site specific decommissioning cost estimate (because the waste items, volumes, and activities assumed in the 1986 reference plant studies will be different from those determined in a site specific estimate).

In summary, DEK's calculated escalation is based on the following:

4. The estimated increase in the cost of disposing of the specific waste types and volumes for Kewaunee in the site specific cost estimate
5. The known annual escalation rate caps of 5 percent for Barnwell from 2005 through mid-2007, and
6. [

] Commercially Sensitive

Commercially Sensitive

RAI No. 4: Page 3, Table 1 – Annual Cash Flow Calculations

The staff applied a 2 percent real rate of return to the trust fund balance of \$380.7 million as of October 31, 2008, thru the remainder of the operating license period. Following the expiration of the operating license, the staff applied 2 percent real rate of return and deducted the License Termination Expenses identified in Column 6 of Table 1 in 2008 dollars. The staff was not able to reconcile the difference between DEK's analysis and the staff's analysis. The staff also applied the recommended 5.233 percent fund growth rate and escalation factor of 3.233 percent, to compare future dollar analysis, and was still not able to reconcile the difference between the staff's analysis and DEK's analysis. Please reconcile the difference between the staff's and DEK's analyses.

DEK Response:

Since the Staff's calculation results are not available, DEK cannot assess the differences. However, one possible reason for not being able to reconcile the results is that DEK, as a conservative measure, applied the 2 percent Real Rate of Return fund growth rate to only 50 percent of the annual expenditures in any year in order to emulate a levelized monthly expenditure pattern and subsequent loss of growth on that portion of funds during the year that the funds would be expended.

RAI No. 5: Page 3, Table 1 – Annual Cash Flow Calculations

The staff requests DEK to address the impacts on its analysis based on the apparent \$9.1 million decrease in the DTF balance to \$370.0 as of December 31, 2008, identified in DEK's submittal dated March 30, 2009, entitled "Decommissioning Funding Status Report." Recognize that if there are changes in the DTF balance that materially impacts the licensee's cost analysis, or if new disposal rates are significantly higher, given these considerations, the licensee would be under an obligation under 10 CFR 50.9 to update any changes in projected cost, or available funds.

DEK Response:

DEK has updated its cash flow tables for both the 50.75(c) (Reference 2) and 50.54(bb) (Reference 1) filings to reflect the most current reconciled Trust Fund balance as of April 30, 2009. Table 3 updates the annual cash flow analyses for the 50.75(c) initial filing. Table 4 updates the annual cash flow analyses for the 50.54(bb) initial filing.

Table 3

**Kewaunee - No License Renewal
Decommissioning Annual Cash Flow Analysis - License Termination 10 CFR 50.75(c)**

	Dates	Amounts	Notes
Current Value of QF as of	4/30/2009	\$ 375,304,015	
Current Value of NQF as of	4/30/2009	\$ -	
Guaranty Amount	4/30/2009	\$ -	
Total Fund Balances as of	4/30/2009	\$ 375,304,015	
Calculation Start Year	2009		Prorated for 04/30/2009
Projected Decom Funds value at Calc date	4/30/2009	\$ 375,304,015	
Projected Decom Study costs 50.75(c) as of	10/31/2008	\$ 380,575,241	License Termination Costs
Start of Decom Expenditures Year	2013	(12/21/2013)	(Assumes No License Renewal - 12/21/2013)

5.253%	Fund Growth Rate	(2008 - 2013) - Revised "after-tax" growth rate for the Trust
3.253%	Cost Esc Rate	(2008 - 2013) - Site Spec Decom cost escalation rate
3.253%	Cost Esc Rate	(2014 - end of Decom) - Site Spec Decom cost escalation rate
5.253%	Fund Growth rate	(2014 - end of Decom) - "after-tax" Trust growth rate (assumes 2% Real Rate of Return)
5.253%	Discount Rate	(Based on Corporate Treasury Guidance)

**KPS Annual Summary Cash Flow - 50.75(c) Radiological Portion
(in future dollars)**

Year	Beginning Balance (Future \$)	Earnings (Future \$)	License Term Expenditures (Future \$)	End of Year Balance (Future \$)	License Term Expenditures (in 10/31/2008 \$)
4/30/2009	\$ 375,304,015	\$ 13,232,520	\$ 0	\$ 388,536,535	\$ 0
1/1/2010	\$ 388,536,535	\$ 20,409,824	\$ 0	\$ 408,946,359	\$ 0
1/1/2011	\$ 408,946,359	\$ 21,481,952	\$ 0	\$ 430,428,311	\$ 0
1/1/2012	\$ 430,428,311	\$ 22,610,399	\$ 0	\$ 453,038,711	\$ 0
1/1/2013	\$ 453,038,711	\$ 23,750,436	\$ 1,815,630	\$ 474,973,517	\$ 1,597,395
1/1/2014	\$ 474,973,517	\$ 23,316,855	\$ 62,193,186	\$ 436,097,186	\$ 52,993,679
1/1/2015	\$ 436,097,186	\$ 21,121,855	\$ 68,011,813	\$ 389,207,227	\$ 56,125,713
1/1/2016	\$ 389,207,227	\$ 17,678,649	\$ 105,326,724	\$ 301,559,153	\$ 84,180,665
1/1/2017	\$ 301,559,153	\$ 13,447,074	\$ 91,141,387	\$ 223,864,840	\$ 70,548,155
1/1/2018	\$ 223,864,840	\$ 10,202,278	\$ 59,293,419	\$ 174,773,699	\$ 44,450,104
1/1/2019	\$ 174,773,699	\$ 8,884,234	\$ 11,293,689	\$ 172,364,244	\$ 8,199,708
1/1/2020	\$ 172,364,244	\$ 8,714,292	\$ 12,945,039	\$ 168,133,497	\$ 9,102,531
1/1/2021	\$ 168,133,497	\$ 7,584,628	\$ 47,493,803	\$ 128,224,322	\$ 32,343,871
1/1/2022	\$ 128,224,322	\$ 6,735,624	\$ -	\$ 134,959,945	\$ -
1/1/2023	\$ 134,959,945	\$ 7,089,446	\$ -	\$ 142,049,391	\$ -
1/1/2024	\$ 142,049,391	\$ 7,461,855	\$ -	\$ 149,511,246	\$ -
1/1/2025	\$ 149,511,246	\$ 7,348,495	\$ 19,239,689	\$ 137,620,052	\$ 11,527,579
1/1/2026	\$ 137,620,052	\$ 6,798,921	\$ 16,381,525	\$ 128,037,448	\$ 9,505,843
50.75(c) Cost Estimate (in 10/31/2008 \$)					\$ 380,575,241
50.75(c) Cost Estimate (in Future \$)			\$ 495,135,904		
Remaining funds at end of 50.75(c) (Discounted to 2009 \$)				\$ 53,622,961	

Completion in 2026 of 50.75(c)
radiological portion of
decommissioning

Table 4

Kewaunee - No License Renewal Decommissioning Annual Cash Flow Analysis - Irradiated Fuel Management Plan 10 CFR 50.54(bb)			
	Dates	Amounts	Notes
Starting Fund Balances for 50.54(bb) as of	1/1/2009	\$0	Initially assumes Trust funds are for 50.75(c) only
Existing Parent Support Agreement	1/1/2013	\$ 60,000,000	Invoke at start of Decom (in 2013 \$)
Additional Parent Assurance Amount	1/1/2016	\$ 170,718,354	Place on 01/01/2016 (in 2016 \$)
Trust Fund Carryover after completion of 50.75(c)	1/1/2027	\$ 128,037,448	Carryover from 50.75(c) / applied to 50.54(bb) (in 2027 \$)
Calculation Start Year	2009		
Projected Decom Funds value at Calc date	4/30/2009	\$0	Initially assumes Trust funds are for 50.75(c) only
Projected Decom Study costs 50.54(bb) as of	10/31/2008	\$ 322,509,110	Irradiated Fuel Pgm Costs (in 10/31/2008 \$)
Start of Decom Expenditures Year	2013		End of License = 12/21/2013

5.253%	Fund Growth Rate	(2008 - 2013) - "after-tax" growth rate for DomR Trusts
3.253%	Cost Esc Rate	(2008 - 2013) - Site Spec Decom cost escalation rate
3.253%	Cost Esc Rate	(2014 - end of Decom) - Site Spec Decom cost escalation rate
5.253%	Fund Growth rate	(2014 - end of Decom) - "after-tax" growth rate (assumes 2% Real Rate of Return)
5.253%	Discount Rate	(Based on Corporate Treasury Guidance)

Table 4 Continued

KPS Annual Summary Cash Flow - Irradiated Fuel Management Plan 50.54(bb) (in future dollars)					
Year	Beg of Year Balance (Future \$)	Earnings (Future \$)	Irradiated Fuel Expenditures (Future \$)	End of Year Balance (Future \$)	Irradiated Fuel Expenditures (in 10/31/2008 \$)
4/30/2009	\$ -	\$ -	\$ -	\$ -	\$ -
1/1/2010	\$ -	\$ -	\$ -	\$ -	\$ -
1/1/2011	\$ -	\$ -	\$ -	\$ -	\$ -
1/1/2012	\$ -	\$ -	\$ -	\$ -	\$ -
1/1/2013	\$ 60,000,000	\$ 3,135,870	\$ 606,506	\$ 62,529,364	\$ 533,605
Convert the 60 MM Parental Assurance to cash (2013\$)					
1/1/2014	\$ 62,529,364	\$ 2,738,577	\$ 20,796,620	\$ 44,471,321	\$ 17,720,421
1/1/2015	\$ 44,471,321	\$ 1,727,794	\$ 23,162,668	\$ 23,036,447	\$ 19,736,487
1/1/2016	\$ 193,754,802	\$ 9,516,114	\$ 25,215,534	\$ 178,055,381	\$ 20,808,735
Convert the 170.7 MM Parental Support to cash (2016\$)					
1/1/2017	\$ 178,055,381	\$ 8,661,899	\$ 26,338,036	\$ 160,379,245	\$ 21,050,245
1/1/2018	\$ 160,379,245	\$ 7,714,314	\$ 27,061,879	\$ 141,031,680	\$ 20,947,296
1/1/2019	\$ 141,031,680	\$ 6,683,639	\$ 27,606,248	\$ 120,109,071	\$ 20,695,392
1/1/2020	\$ 120,109,071	\$ 5,573,768	\$ 28,015,641	\$ 97,667,198	\$ 20,340,569
1/1/2021	\$ 97,667,198	\$ 4,907,373	\$ 8,502,657	\$ 94,071,913	\$ 5,978,792
1/1/2022	\$ 94,071,913	\$ 4,711,943	\$ 8,752,428	\$ 90,031,427	\$ 5,960,513
1/1/2023	\$ 90,031,427	\$ 4,492,778	\$ 9,015,430	\$ 85,508,774	\$ 5,946,176
1/1/2024	\$ 85,508,774	\$ 4,248,482	\$ 9,270,878	\$ 80,486,378	\$ 5,922,000
1/1/2025	\$ 80,486,378	\$ 3,964,645	\$ 10,032,229	\$ 74,418,794	\$ 6,206,421
1/1/2026	\$ 74,418,794	\$ 3,638,171	\$ 10,326,451	\$ 67,730,514	\$ 6,187,157
1/1/2027	\$ 195,767,962	\$ 10,016,124	\$ 10,205,621	\$ 195,578,465	\$ 5,922,100
Additional \$128.0 MM Carryover from 50.75(c) in cash (2027\$)					
1/1/2028	\$ 195,578,465	\$ 9,997,449	\$ 10,537,636	\$ 195,038,279	\$ 5,922,100
1/1/2029	\$ 195,038,279	\$ 9,960,067	\$ 10,880,452	\$ 194,117,894	\$ 5,922,100
1/1/2030	\$ 194,117,894	\$ 9,902,419	\$ 11,234,420	\$ 192,785,893	\$ 5,922,100
1/1/2031	\$ 192,785,893	\$ 9,822,846	\$ 11,599,904	\$ 191,008,835	\$ 5,922,100
1/1/2032	\$ 191,008,835	\$ 9,719,580	\$ 11,977,279	\$ 188,751,136	\$ 5,922,100
1/1/2033	\$ 188,751,136	\$ 9,590,743	\$ 12,366,930	\$ 185,974,950	\$ 5,922,100
1/1/2034	\$ 185,974,950	\$ 9,434,335	\$ 12,769,258	\$ 182,640,027	\$ 5,922,100
1/1/2035	\$ 182,640,027	\$ 9,248,232	\$ 13,184,674	\$ 178,703,585	\$ 5,922,100
1/1/2036	\$ 178,703,585	\$ 9,030,174	\$ 13,613,605	\$ 174,120,155	\$ 5,922,100
1/1/2037	\$ 174,120,155	\$ 8,777,762	\$ 14,056,490	\$ 168,841,427	\$ 5,922,100
1/1/2038	\$ 168,841,427	\$ 8,488,446	\$ 14,513,783	\$ 162,816,089	\$ 5,922,100
1/1/2039	\$ 162,816,089	\$ 8,159,517	\$ 14,985,954	\$ 155,989,653	\$ 5,922,100
1/1/2040	\$ 155,989,653	\$ 7,788,102	\$ 15,473,485	\$ 148,304,270	\$ 5,922,100
1/1/2041	\$ 148,304,270	\$ 7,371,147	\$ 15,976,876	\$ 139,698,540	\$ 5,922,100
1/1/2042	\$ 139,698,540	\$ 6,905,414	\$ 16,496,645	\$ 130,107,309	\$ 5,922,100
1/1/2043	\$ 130,107,309	\$ 6,387,465	\$ 17,033,323	\$ 119,461,451	\$ 5,922,100
1/1/2044	\$ 119,461,451	\$ 5,813,656	\$ 17,587,460	\$ 107,687,648	\$ 5,922,100
1/1/2045	\$ 107,687,648	\$ 5,180,120	\$ 18,159,624	\$ 94,708,143	\$ 5,922,100
1/1/2046	\$ 94,708,143	\$ 4,482,756	\$ 18,750,403	\$ 80,440,496	\$ 5,922,100
1/1/2047	\$ 80,440,496	\$ 3,717,218	\$ 19,360,401	\$ 64,797,313	\$ 5,922,100
1/1/2048	\$ 64,797,313	\$ 2,878,898	\$ 19,990,244	\$ 47,685,967	\$ 5,922,100
1/1/2049	\$ 47,685,967	\$ 1,962,914	\$ 20,640,578	\$ 29,008,303	\$ 5,922,100
1/1/2050	\$ 29,008,303	\$ 742,439	\$ 29,750,742	\$ 0	\$ 8,267,000
50.54(bb) Cost Estimate (in 10/31/2008\$)					\$ 322,509,110
50.54(bb) Cost Estimate (in Future \$)			\$ 605,848,992		
Remaining funds at end of 50.54(bb) (discounted to 2009 \$)				\$ 0	

RAI No. 6: Attachment, Page 4, Table 2-2

DEK has selected immediate dismantlement (DECON) as its decommissioning option. For immediate dismantlement, the cost associated with isolation of the spent fuel pool (wet storage) to support cooling the last core while the plant is being dismantled was not identified as part of KPS's radiological decommissioning cost. The staff disagrees with allocating that cost under "spent fuel" as it is a necessary step to DECON the plant. DEK has estimated a cost of \$20.8 million for fuel pool planning and design, and an additional \$103.3 million associated with the cost for fuel cooling, wet storage, and eventual transfer to dry cast storage. The staff has taken the position that these are essential activities necessary to support immediate dismantlement and part of the radiological decommissioning costs, and therefore it is necessary to have the supporting funding set aside as part of the decommissioning trust funds (DTF) to complete radiological decommissioning. When the staff included in its analysis the cost identified in Table 2 of the December 19, 2008 (No. 08-0754) submittal that addressed the annual expenses for spent fuel management for the years from 2013-2020 as part of the radiological decommissioning costs, the DTF balance was not sufficient to address all of the DECON costs. DEK needs to address the DTF shortfall.

DEK Response:

DEK respectfully requests that the NRC Staff reconsider this RAI, as the position stated in the RAI appears inconsistent with the NRC rules, Commission statements, and guidance.

In promulgating its decommissioning rules including 10 C.F.R. § 50.75, the Commission stated:

*Decommissioning activities do not include the removal and disposal of spent fuel which is considered to be an operational activity. . . .*¹⁷

This exclusion is reflected in 10 C.F.R. § 50.75, which states:

*Amounts [for minimum decommissioning funding] are based on activities related to the definition of "Decommission" in § 50.2 of this part and do not include the cost of removal and disposal of spent fuel. . . .*¹⁸

The provisions in the Commission's rules and statement of considerations excluding spent fuel cost from the definition of decommissioning do not make any distinction

¹⁷ 53 Fed. Reg. 24,018, 24,019 (June 27, 1988).

¹⁸ 10 C.F.R. § 50.75(c) n.1. See also 53 Fed. Reg. at 24,031 ("The final rule text also indicates that amounts are based on activities related to the definition of "decommission" in 10 CFR 50.2 and do not include the cost of removal and disposal of spent fuel. . . .")

between spent fuel costs incurred during SAFSTOR and spent fuel costs incurred DECON. Consequently, a Staff position suggesting such a distinction cannot be supported and indeed would be inconsistent with the NRC's unqualified language in the NRC rulemaking. Moreover, it is clear that the Commission intended to exclude spent fuel storage costs even under a DECON scenario. The NRC's minimum decommissioning funding requirements in 10 C.F.R. § 50.75(c) are based on decommissioning costs estimates developed by Pacific Northwest Laboratory ("PNL") for a reference PWR and BWR¹⁹, and the specific estimates used to derive the formula amounts were based on the DECON scenario.²⁰ As the Commission stated when it promulgated its decommissioning funding rule, and as reflected in footnote 1 to 10 C.F.R. § 50.75(c), "*The PNL costs do not include the cost of . . . storage and shipment of spent fuel. . . .*"²¹

The position in RAI 6 that spent fuel costs associated with a DECON scenario should be considered a radiological decommissioning costs is thus fundamentally inconsistent with the NRC rules. If the spent fuel costs associated with a DECON scenario were considered part of the radiological decommissioning costs, they would have been included in the PNL studies and included in 10 C.F.R. § 50.75(c).

The position in RAI 6 is also inconsistent with 10 C.F.R. § 50.54(bb), which establishes requirements separate and distinct from the decommissioning rules for funding "*the management of all irradiated fuel at the reactor following permanent cessation of operation until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository.*"²² In promulgating the decommissioning funding rules, the NRC made it clear that the requirements in Section 50.54(bb) would govern spent fuel management, and not the decommissioning rules.

The actual safety aspects and costs associated with storage of spent fuel on an interim basis after shutdown would not be dealt with as part of a licensee's actual planning of decommissioning activities or in the decommissioning plan which he would submit to the NRC under Section 10 CFR 50.82. These items are treated in the existing regulations in 10 CFR 50.54(bb) in which it is indicated that, for operating power reactors, licensees are to submit written notification to the Commission for its review and preliminary approval of the program by which the licensee intends to manage and provide funding for the management of all irradiated fuel at the reactor upon expiration of the reactor operating license until the fuel is transferred to DOE for ultimate disposal.

¹⁹ See 53 Fed. Reg. at 24,027-28

²⁰ See, e.g., NUREG/CR-0130, "Technology, Safety and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station," (July 1988) Addendum 4, Ch. 6 & App. B.

²¹ 53 Fed. Reg. at 24,028.

²² 10 C.F.R. § 50.54(bb) (emphasis added).

Since the storage of spent fuel at a reactor is outside the scope of this [decommissioning] rule, the proposed decommissioning rule does not address whether the storage of spent fuel at a reactor is licensed under 10 CFR Part 50 or 10 CFR Part 72.²³

Thus, the Commission intended spent fuel management costs to be addressed under 10 C.F.R. § 50.54(bb), not Section 50.75. If the Commission had intended 10 C.F.R. § 50.54(bb) to cover only certain spent fuel management costs, or only spent fuel management costs when the SAFSTOR option is used, it presumably would have said so. Neither the wording of 10 C.F.R. § 50.54(bb) nor the Commission's statements in promulgating the decommissioning rules suggest or support such a distinction.

Further, the Commission has repeatedly advised licensees not to include spent fuel management costs in their decommissioning funding submittals.²⁴ Indeed, just this year, the NRC advised licensees that:

The NRC has not precluded the commingling in a single account of funds accumulated to comply with NRC radiological decommissioning requirements and funds accumulated to address State site restoration costs (State costs) and spent fuel management costs, as long as the licensee is able to identify and account for the NRC radiological decommissioning funds that are contained within its single account. However, NRC staff has learned that some licensees, in response to the requirement that they report the amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report, have reported as part of that amount funds accumulated to address State costs and spent fuel management costs. Accordingly, NRC staff is clarifying for licensees the need to report radiological decommissioning fund balances that are distinct from amounts accumulated for other purposes, such as paying for . . . spent fuel management.

* * *

Funds accumulated to pay for . . . spent fuel management costs are not to be included in the reported amount of radiological decommissioning funds accumulated.²⁵

²³ NUREG-1221, "Summary, Analysis and Response for Public Comments on Proposed Amendments to 10 CFR Parts 30, 40, 50, 51, 70, and 72: Decommissioning Criteria for Nuclear Facilities" (May 1988) at B-3 (emphasis added).

²⁴ See, e.g., NRC Regulatory Issue Summary 01-007, "10 CFR 50.75(f)(1) Reports on the Status of Decommissioning Funds," at 2 (Feb. 23, 2001) ("In reporting the financial status of decommissioning funds, licensees should either omit or list separately, the costs of non NRC-defined decommissioning activities, such as . . . the costs of managing and storing spent fuel on site. These non-radiological costs are not counted as part of NRC's required decommissioning funding assurance.")

²⁵ NRC Regulatory Issue Summary 2001-07, Rev. 1, "10 CFR 50.75 Reporting and Recordkeeping for Decommissioning Planning," at 2 (Jan. 8, 2009).

Moreover, the exclusion of spent fuel management costs from the scope of NRC decommissioning estimating and funding requirements is specifically reflected in the NRC guidance applicable to DEK's preliminary decommissioning cost estimate, which DEK considered in preparing its 10 C.F.R. § 50.75(f)(3) submittal. For example, Regulatory Guide 1.202, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Reactors" (Feb. 2005) states:

*The NRC's definition of decommissioning does not include other activities related to facility deactivation and site closure, including operation of the spent fuel storage pool, construction and/or operation of an independent spent fuel storage installation (ISFSI). . . . Accordingly, this regulatory guide does not address such "non-NRC decommissioning costs. . . ."*²⁶

Similarly, NUREG-1713, "Standard Review Plan for Decommissioning Costs Estimates for Nuclear Power Reactors" (Dec. 2004), states:

*The minimum decommissioning funding required by the NRC reflects only the efforts necessary to terminate of the Part 50 license. Other activities related to facility deactivation and site closure, including operation of the spent fuel storage pool, construction and operation of an independent spent fuel storage installation (ISFSI). . . . are not included in the NRC definition of decommissioning. Accordingly, costs for such "nondecommissioning activities" are not addressed in this SRP. . . ."*²⁷

And NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance" (Rev.1, Feb. 1999) provides:

*[T]he costs of managing and storing spent fuel on site until transfer to the Department of Energy for permanent disposal are not included in NRC cost formulas.*²⁸

In contrast, DEK is not aware of any provisions in the NRC rules or guidance indicating that spent fuel pool planning and design, fuel cooling, wet storage, and eventual transfer to dry cask storage should be considered decommissioning costs if a licensee is proposing to conduct decommissioning using the DECON option.

Therefore, DEK respectfully requests that the NRC staff reconsider this RAI.

²⁶ Reg. Guide 1.202 at 1.202-2.

²⁷ NUREG-1713 at 2.

²⁸ NUREG-1577, Rev. 1, at 16.

KPS Irradiated Fuel Management Plan (08-0754) (Reference 1)

RAI No 7: Attachment, Page 2

In this submittal, DEK references a "Parent Support Agreement" in the amount of \$60.0 million to be used for supplementing DEK in the event of an operational outage lasting more than 6 months and for decommissioning. Provide documentation regarding the "Parent Support Agreement" and how there is reasonable assurance that these funds will be available in 2013 to support decommissioning since the funds are also allocated to support an extended outage. Please identify whether the additional amount of \$131.8 million is assured by a financial mechanism, or has it been established to support a spent fuel management program?

DEK Response:

The Support Agreement between Dominion Resources, Inc. and Dominion Energy Kewaunee, Inc., dated July 5, 2005 ("Parent Support Agreement") is available on the NRC docket at ADAMS Accession No. ML052240370 and ML052170405. As its third recital indicates, this Parent Support Agreement is established to ensure DEK's *"ability to pay the expenses of operating and decommissioning Kewaunee safely and protecting the public health and safety (the 'Expenses') and to meet Nuclear Regulatory Commission ('NRC') requirements during the operating life and decommissioning of the Kewaunee Assets (the 'NRC Requirements')."*²⁹ Thus, as stated in DEK's letter submitting the executed Parent Support Agreement to the NRC Staff, *"[t]he purpose of the Support Agreement is to provide a source of funds for DEK to pay the estimated fixed operations and maintenance costs for an outage of at least six months throughout the operating life of the plant and the completion of decommissioning."*³⁰ The Parent Support Agreement therefore provides that:

*From time to time, upon request of Subsidiary, Dominion shall provide or cause to be provided to Subsidiary such funds as Subsidiary determines to be necessary to pay its Expenses and meet the NRC Requirements; provided, however, in no event shall the aggregate amount which Dominion is obligated to provide under this Agreement exceed \$60 Million.*³¹

Accordingly, the Parent Support Agreement is a commitment applicable to expenses and NRC requirements through the decommissioning period.

²⁹ Parent Support Agreement at 1 (third recital).

³⁰ Dominion Energy Kewaunee, Inc., Kewaunee Power Station, Executed Support, Indemnity, and Decommissioning Trust Agreements, Serial No. 05-431 (Aug. 4, 2005).

³¹ Parent Support Agreement, paragraph 1.

DEK's Irradiated Fuel Management Plan assumes that the entire \$60 million amount would be available upon permanent cessation of operations in 2013 (assuming no license renewal) and that this amount would be placed in trust at that time to pay post-shutdown spent fuel management costs. It is possible that funds available under the Parent Support Agreement could be drawn down prior to permanent cessation of operations, but unlikely as DEK has never drawn on the Parent Support Agreement during its operation of Kewaunee. In any event, even if funding under the Parent Support Agreement were drawn down prior to permanent cessation of operation, DEK would, pursuant to its Irradiated Fuel Management Plan, obtain and put in place the full \$60 million of funding assurance, at the beginning of the decommissioning period, to be used for spent fuel management costs.

DEK's report pursuant to 10 C.F.R. § 50.54(bb) (reference 1) indicates that the Parent Support Agreement would be increased or additional parental assurance would be provided in the amount of \$131.8 million (revised filing amount of \$170.7 million) in 2016. This amount is not currently assured by a financial mechanism, but rather is a commitment established in the Irradiated Fuel Management Plan to provide parental assurances at the time of permanent cessation of operations to deposit this additional amount into the trust in 2016. Such a commitment to provide a further contribution was accepted in the NRC's approval of Vermont Yankee's Spent Fuel Management Plan.³²

³² See Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Spent Fuel Management Program and the Preliminary Decommissioning Cost Estimate, Entergy Nuclear Operations Inc., Vermont Yankee Nuclear Power Station, Docket No. 50-271 (Feb. 3, 2009) at 4.

RAI No. 8: Submittal 08-0754, Attachment, Page 3, Table 2 (Reference 1)

In this submittal, Table 2 lists spent fuel management costs of \$322.6 million in 2008 dollars. Based on a DTF balance of \$74.5 million in current (2008) dollars combined with a proposed supplement of \$60.0 million in 2013 (in 2013 dollars), and an additional \$131.8 million, if needed, in 2016 dollars, the total amount of funds available is less than the referenced \$322.6 million in 2008 dollars. The total available funds, not withstanding discounting of 2013 and 2016 funds to 2008 dollars, is underfunded by more than \$50.0 million dollars. DEK needs to address this funding shortfall.

DEK response:

The Parent Support Agreement amount of \$60 million converts to cash and starts interest accrual in 2013, prior to the start of decommissioning expenditures. The additional parental assurance (now increased to \$170.7 million as shown in Table 4) converts to cash and starts interest accrual in 2016. Finally, the carryover amount from 50.75(c) of \$128 million (in 2027 dollars) starts interest accrual in 2027. See Table 3 and Table 4 above.

References:

1. Letter from J. A. Price (DEK) to Document Control Desk, "Report Pursuant to 10 CFR 50.54(bb)," dated December 19, 2008. (DEK Serial No. 08-0754)
2. Letter from J. A. Price (DEK) to Document Control Desk, "Report Pursuant to 10 CFR 50.75(f)(3)," dated December 18, 2008. (DEK Serial No. 08-0702)

Attachment 4

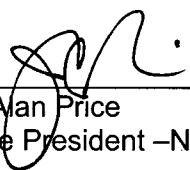
APPLICATION FOR WITHHOLDING INFORMATION AND
AFFIDAVIT OF J. ALAN PRICE

**KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.**

APPLICATION FOR WITHHOLDING INFORMATION
AND
AFFIDAVIT OF J. ALAN PRICE

I, J. Alan Price, Vice President – Nuclear Engineering, of Dominion Energy Kewaunee, Inc. state that:

1. I am authorized to execute this affidavit on behalf of Dominion Energy Kewaunee (DEK).
2. DEK is submitting responses to a NRC Request for Additional Information (RAI) as part of the NRC review of letters from DEK dated December 18 and 19, 2008, regarding required reports pursuant to 10 CFR 50.54(bb) and 10 CFR 50.75(f)(3). Attachment 1 of this response contains proprietary commercial information that should be held in confidence by the NRC pursuant to the policy reflected in 10 CFR §§ 2.390(a)(4) because:
 - a. This information is being held in confidence by DEK.
 - b. This information is of a type that is held in confidence by DEK, and there is a rational basis for doing so because the information contains sensitive commercial information concerning a DEK contract.
 - c. This information is being transmitted to the NRC in confidence.
 - d. This information is not available in public sources and could not be gathered readily from other publicly available information.
 - e. Public disclosure of this information would create substantial harm to the competitive position of DEK by disclosing confidential contract information to other parties whose commercial interests may be adverse to those of DEK. Therefore, the use of this confidential information by competitors may permit them to use the information to develop competitive advantages over DEK.
3. Accordingly, DEK requests that the designated document be withheld from public disclosure pursuant to the policy reflected in 10 CFR §§ 2.390(a)(4).

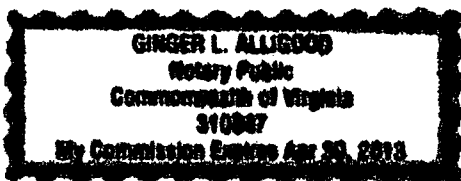


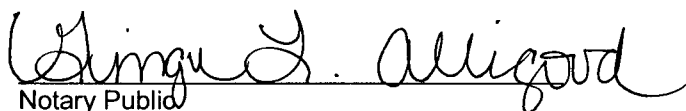
J. Alan Price
Vice President – Nuclear Engineering

STATE OF Virginia COUNTY OF Henrico

Acknowledged before me this 1st day of July, 2009.

My registration number is: 310847 My Commission Expires: 4/30/13





Notary Public